ACUBRITE™ 21-Nav

USER MANUAL

ACUBRITE 21-Nav Monitor

(2nd Edition 05/25/2012)

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IMPORTANT INFORMATION

EMC conformance

All Acura Embedded System products are designed to the best industry standards for use in the recreational environment. The design and manufacture of Acura's equipments and accessories conform to the appropriate Electro Magnetic Compatibility (EMC) standards, but correct installation is required to ensure that performance is not compromised.

Waste Electrical and Electronic Equipment Directive

The Waste Electrical and Electronic Equipment (WEEE) Directive requires the recycling of waste electrical and electronic equipment. Whilst the WEEE Directive does not apply to some of Acubrite21-Nav 's products, we support its policy and ask you to be aware of how to dispose of this product.

The crossed out wheelie bin symbol, illustrated above, and found on our products signifies that this product should not be disposed of in general waste or landfill. Please contact your local dealer, national distributor or Acubrite21-Nav Technical Services for information on product disposal.

Restriction of the use of certain Hazardous Substances

This product uses components that comply with the requirements of the Restriction of the use of certain Hazardous Substances (RoHS) Directive 2002/95/ EC.

Warranty

To register your new Acura's product, please go to:

www.acuraembedded.com

It is important that you complete the owner information to receive full warranty benefits, including notification of software updates if they are required.

Packing List

Before installation, please ensure the following items have been shipped:

1 x Acubrite21-Nav Series Display

4 x Mounting bracket lugs and 4 stainless steel threaded studs

1 x Power Cable (5000 mm)

1 x VGA Cable (3000 mm)

1 x CD for User Manual and Touch Driver

If any of these items should be missing or damaged, please contact your distributor or sales representative immediately.

1.0 INTRODUCTION

About Acubrite21-Nav™ Display

Acubrite21-Nav ™ Series Display, the high-performance, equipped with optical bonding AR glass or sunlight readable touch monitor, is specially engineered to survive the most demanding applications. You will soon become familiar with the quality difference in this bright sunlight readable (0.5 to 1,000 nits) monitor.

The range of Acubrite21-Nav Sunlight Viewable Displays has been developed to be used as part of an integrated navigation system or within an entertainment system. The displays, available in several sizes, are designed to be waterproof and suitable for use above or below decks.

The Acubrite21-Nav ™ Series Display sunlight readable monitor handles a wide-range of extreme environments making it the industry choice for mobile applications. Housed in a milled billet aluminum case, the slim-profile Acubrite21-Nav ™ Series Display is light weight and watertight. Front-mounted controls and the touch screen make the industrial rugged monitor user-friendly. We have incorporated the latest optical engineering to achieve optimal view ability in all lighting conditions, including direct sunlight. The Acubrite 21-Nav ™ Series Display’s power efficient, low heat design results in increased reliability and longevity required for mission critical deployment.

This handbook contains important information on the installation, operation and maintenance of the Acubrite21-Nav Sunlight Viewable Display range which is intended for use in the recreational market and covers all models.

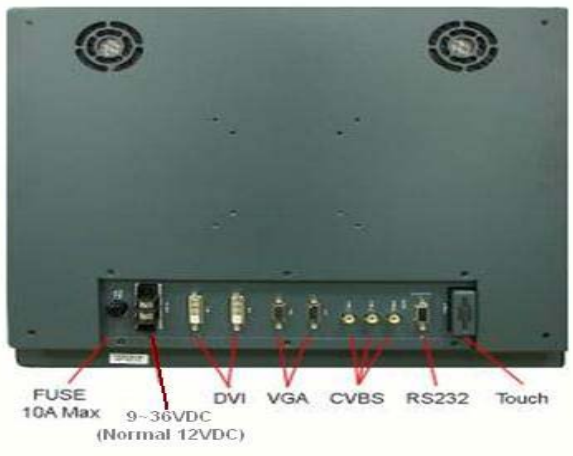
2.0 CONTROL AND FEATURES

Your Acubrite 21-Nav Sunlight Viewable Display has the following controls and features:

Front View

Remarks: The PIP function is only available for ACUBRITE 21-Nav model

Back View



3.0 INSTALLATIONS

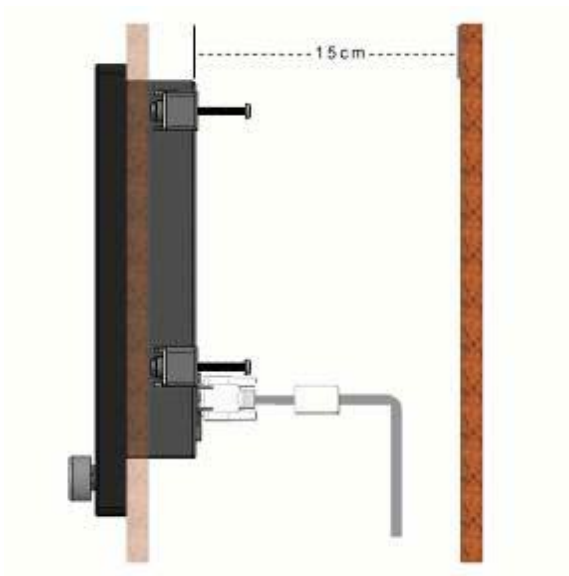
It is important that your new display is installed and operated in accordance with the instructions provided in this handbook. Failure to do so could result in poor product performance and may invalidate your warranty.

When planning the installation the following points must be considered:

- Your Acubrite21-Nav display is sunlight viewable and visible in direct sunlight..
- If temperatures exceed the normal temperature operating range the display could overheat and begin to blackout due to the limitations of TFT LCD technology.
- In order to minimize the chances of a malfunction, the following precautions should be taken during installation:
    - The display should be installed in an area where there is proper and adequate ventilation (min. 15cm clearance) . If it is possible to cool the area behind the display, it will significantly reduce the risk of a malfunction.
    - The display should be mounted at an angle to the sun. We do not recommend mounting the unit in a flat plane, which increases the surface area exposed to the sun and leads to increased heat absorption.

IMPORTANT:

Your Acubrite21-Nav display is only waterproof from the front. To maintain watertight integrity the display must be flush mounted ensuring that the rear casing is enclosed in a watertight enclosure.



The Acubrite 21-Nav ™ Series Display is designed to be mounted in two configurations:

VESA75 / VESA100 MOUNT

The Acubrite21-Nav ™ Series Display is designed compatible with VESA75 and VESA100 mount. By installing the monitor with this kit, the user can adjust the viewing angle to improve view ability in changing environments. This mounting system has proven to be successful in supporting an extreme amount of weight in high vibration and difficult-mount applications.

The back of the monitor includes mounting points that you can use to mount the monitor as your installation requires.

Mounting holes on the Acubrite 21-Nav ™ Series Display allow the monitor to be mounted by rear mounted using VESA75 or VESA100 mount

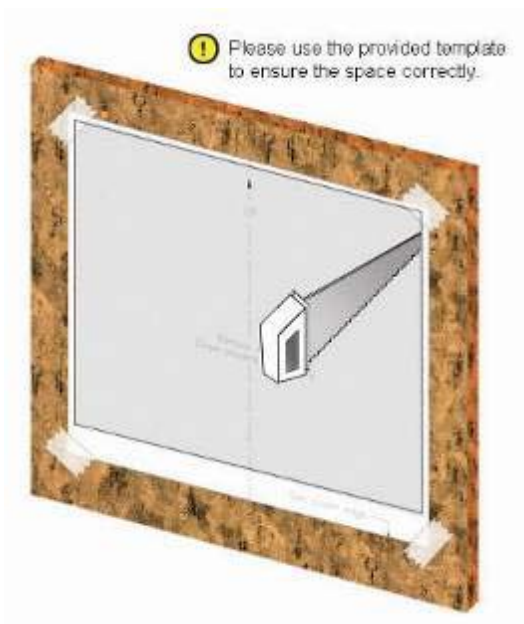
PANEL (Flush) MOUNT

For installation, there are four tapped mounting holes on the two sides of the unit's panel. The mounting hardware packet is included with the product accessories in the shipping box. This packet includes four (4) stainless steel threaded studs, 3.2 cm and four (4) mounting lock nuts.

Your monitor can be installed using the mounting lock nuts (supplied) in the vertical keyways. Make sure that both brackets are in the same orientation.

Preparing the installation site

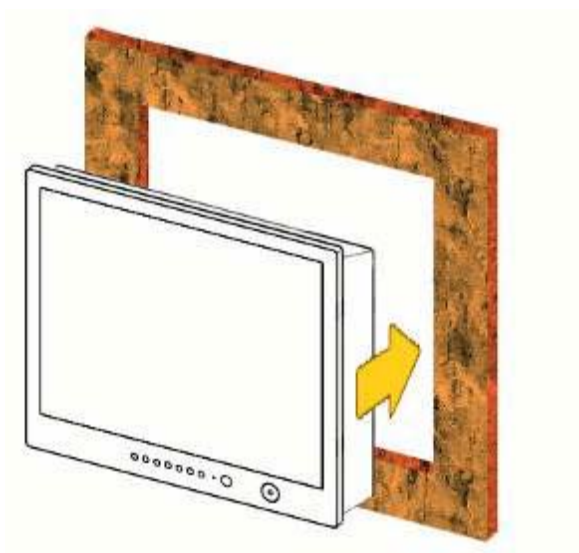
1. Select an installation site that has sufficient space behind for cable connections and ventilation.
2. Tape the supplied flush mount template in the required position.
3. Using a jigsaw, carefully remove the shaded portion of the template.
4. Using a suitable file, smooth the edges of the aperture.



Installing the display

1. Carefully insert the monitor into the aperture, ensuring that the gasket on the rear of the fascia lays flat against the aperture edge.

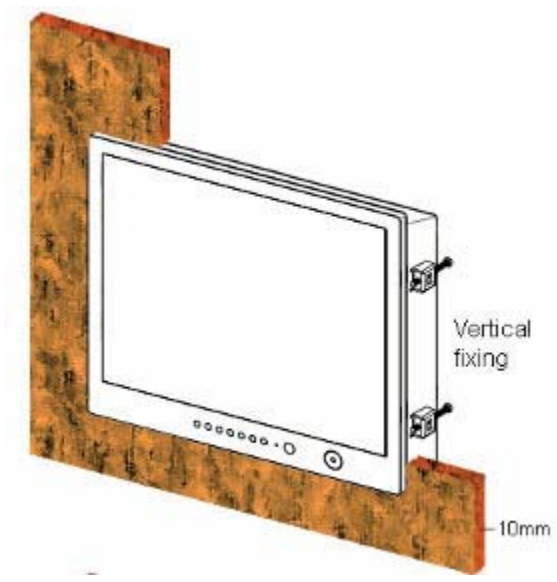
IMPORTANT:
The gasket must lay flat against the aperture edge to ensure watertight integrity.



2. Place the mounting bracket lugs into the keyways and move them to the rear, securing the bracket to the monitor.

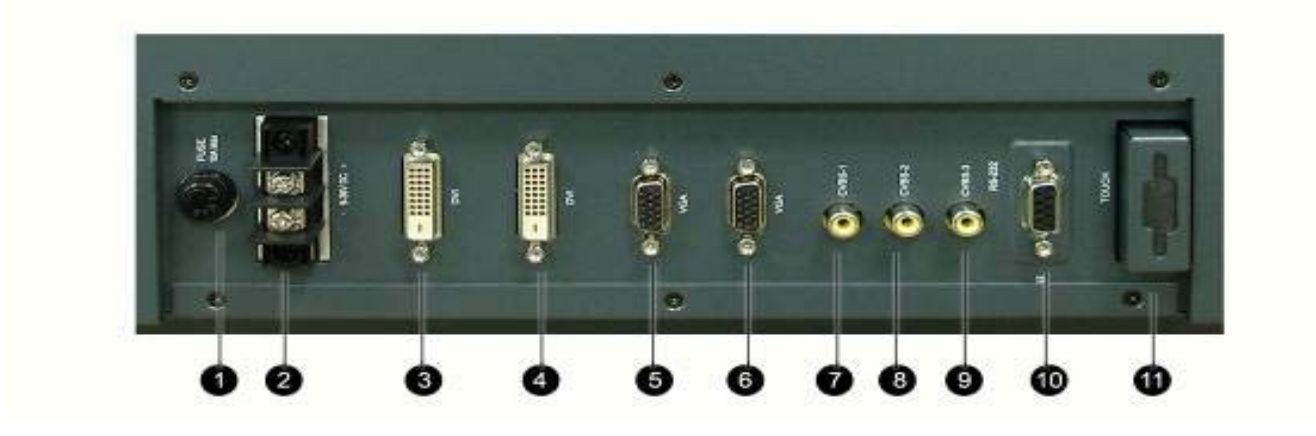
Note: The mounting brackets can be used in either the horizontal or vertical keyways as required.

3. Using a suitable screwdriver, tighten the mounting bracket screws to secure the monitor in position.



4. Connect all cables as required - see “Rear connections” below.

Rear connections



Remarks: The photo above will differ for different model

The rear connectors are:

1. FUSE
2. Power Input
3. DVI-1 Input
4. DVI-2 Input
5. VGA-1 Input
6. VGA-2 Input
7. CVBS-1 Input (Composite Video) for AV input
8. CVBS-2 Input (Composite Video) for AV input
9. CVBS-3 Input (Composite Video) for AV input
10. RS232 Input
11. USB for Touch control (option)

Planning the installation

Before you install your display, the following points should be considered:

• Power requirements.

• Display location and mounting options.

• Additional accessories, e.g. keyboard or speakers.

Power requirements

Your Sunlight Viewable display is designed to run on boat's power systems, with AC/DC adaptor Acubrite 21-Nav series are equipped with 9~36V DC wide range power input.

For power connection, please make sure the power cable is tightly connected by two screws of the terminal block.

The output pin of AC/DC adaptor should be checked and make sure the polarity of voltage is connected properly.

Grounding the display

It is important that an effective radio frequency (RF) ground is connected to the display. You must ground the display by connecting the drain wire (shield) of the power input cable to the nearest ground point of the boat's RF ground system.

Display location and mounting options

Your display can be mounted using the flush mounting kit supplied. Acubrite21-Nav recommends that you power the unit and select a suitable mounting location prior to installing the display.

When planning the display location, the following points should be considered to ensure safe, comfortable and reliable operation:

•**Convenience** - the mounting location should be easily accessible to allow operation of the controls and should enable easy viewing of the display.

Power connections

The power connection to the display should be made at either the output of the battery isolator switch, or at a DC power distribution panel. Acubrite21-Nav recommends that power is fed directly to the display via its own dedicated cable system and MUST be protected by a thermal circuit breaker or fuse, fitted close to the power connection. If you do not have a thermal circuit breaker or fuse in your power circuit, you MUST fit an in-line breaker or fuse to the positive (red) lead of the power cable.

• **Installation angle** - the display should be mounted at an angle. Mounting it in a flat plane is not recommended due to increased heat absorption.

• **Viewing angle** - this LCD has been chosen to give the very best performance, including viewing angle. However, the contrast and colors seen on all LCD displays vary slightly with viewing angle.

• **Environment** - to prevent overheating, do not restrict airflow at the rear of the display unit; If the space behind the display is air conditioned or cooled by a fan, it will help in keeping the unit's temperature down when mounted in direct sunlight.

FAILURE TO ADEQUATELY VENTILATE THE UNIT COULD INVALIDATE YOUR WARRANTY.

The display should be protected from physical damage and excessive vibration. Although the display unit is waterproof from the front when installed correctly, it is good practice to mount it in a protected area away from prolonged and direct exposure to rain and salt spray. DO NOT place the display near to a heat source.

Typical Installation Diagram

Remarks: The real installation diagram above is only for reference and will differ for different kind of customer's applications

4.0 TOUCH DRIVER INSTALLATIONS

Both AR glass and Resistive touch screen solutions are used for our products. If you have a customized or tailored product, please check the specifications in this manual or provide us your third-party specifications.

Resistive Touch Screen

It generally uses a display overlay composed of layers, each with a conductive coating on the interior surface. Special separator “dots” are distributed evenly across the active area and separate the conductive interior layers. The pressure from using either a mechanical stylus or finger produces an internal electrical contact at the “action point” which supplies the controller with vertical and horizontal analog voltages for data input. The resistive touch screens are anti-glare to reduce reflective shine intensity, which will slightly diffuse the light output throughout the screen. Resistive technology activation can be initiated by; a gloved hand, fingernail, mechanical stylus or an ungloved finger.

Resistive Touch - Brief Specifications

Subject	Details
Input Method	Finger & Stylus Finger & Stylus Touch Stylus Touch Stylus Gloved Hand
Touch Activation Force	0.10 - 0.80N (10 - 80g)
Insulation Resistance	> = 20M /25V(DC)
Light Transmission	> 80%
Operating Temperature	-20°C~ +70°C
Storage Temperature	-40°C~ +80°C
Humidity (Operating)	20%RH ~ 80%RH
Surface Hardness	>=3H
Durability	35,000,000 times

This touch panel controller provides the optimistic performance of analog resistive touch panels for 4 wire, 5 wire and 8 wire models. It communicates with PC system directly through RS232, PS/2 or USB connector. Users can see how superior the design is in sensitivity, accuracy and friendly operation. The touch panel driver emulates mouse left and right button function and supports operation systems including Microsoft Windows 95 / 98 / ME /NT4 / 2000 / XP / XP Tablet PC Edition, Windows CE 2.12 / 3.0 / .NET, Linux, iMac and DOS.

Installing Software

TouchKit is software, which contains drivers of the touch panel controllers for the specified communication connectors, RS232, PS/2 and USB, and the other two utilities:

· Touch Tray support

This is utility for emulating the right and left button of mouse through controlling touch panel. Users can toggle between right or left mouse buttons by this utility.

· Configuration support

The calibration and draw test of touch panel are done by this utility. Besides, users can add or remove for new RS-232, PS/2 or USB touch panel devices. Follow these steps to install **TouchKit**

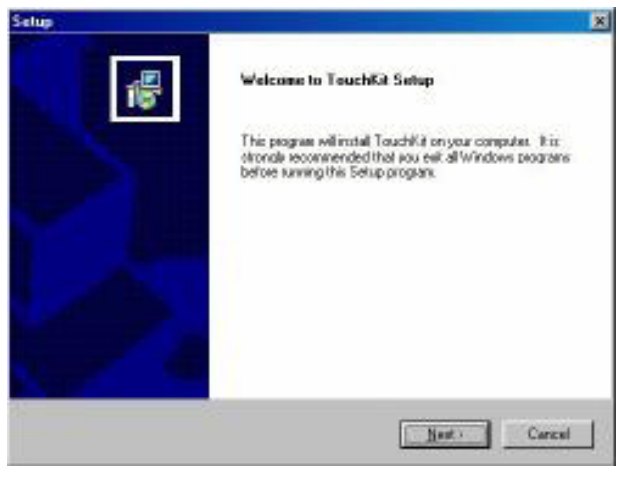
1.Put the TouchKit CD to CD-ROM.

2.Change directory to Win9X_ME

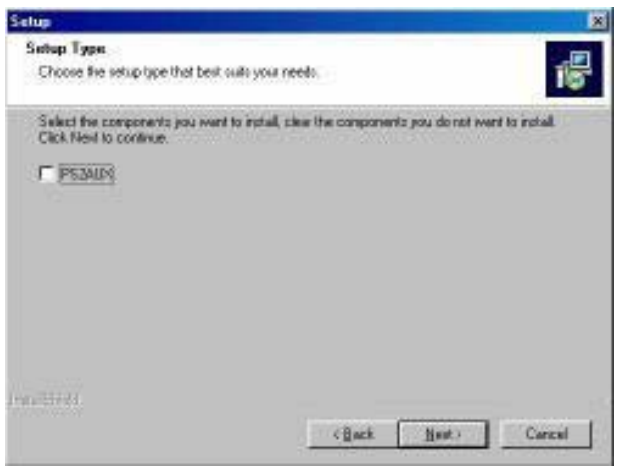
3.Double click the Setup.exe , then windows starts to run the installation program.

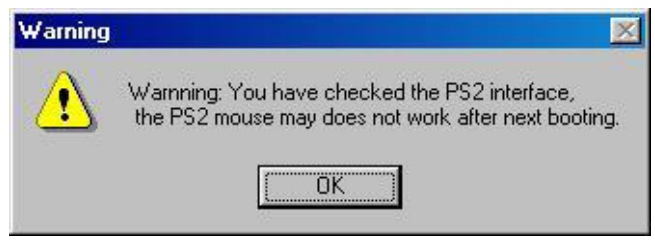
Notice that do not plug the USB controller on the system before the installation has been finished.

4.Just click [Next >] button to continue installation.


Setup
Welcome to TouchKit Setup
This program will install TouchKit on your computer. It is
stronde recommended that you exit all Windows programs
before running this Setup program.
Next >
Cancel

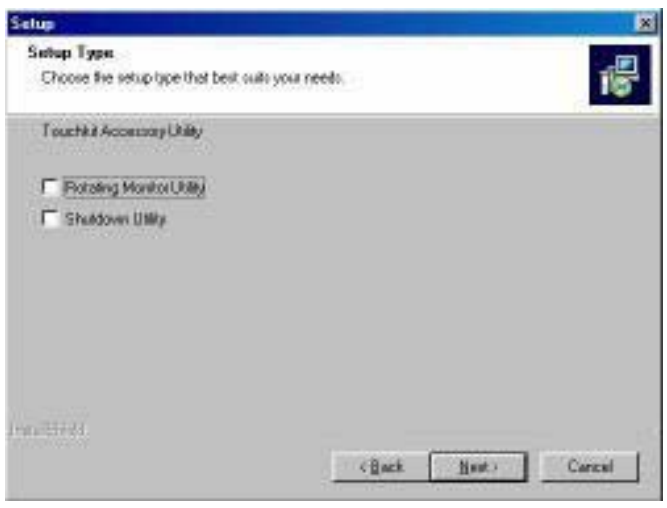
5.Then check the check box if PS/2 touch controller is to be installed. The default is unchecked. Then Press **[Next >]** to continue installation.


Setup
Setup Type
Choose the setup type that best suits your needs.
Select the components you want to install, clear the components you do not want to install.
Click Next to continue.
PS2AUX
< Back
Next >
Cancel

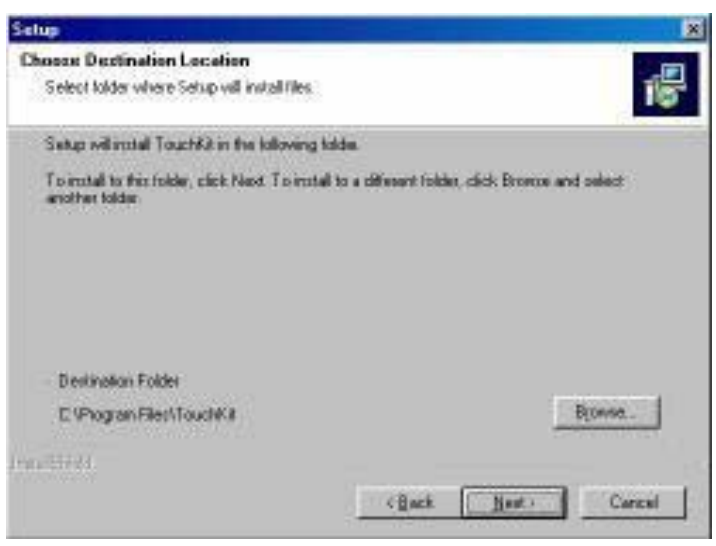


System will give you a warning, if users check the PS2AUX check box,

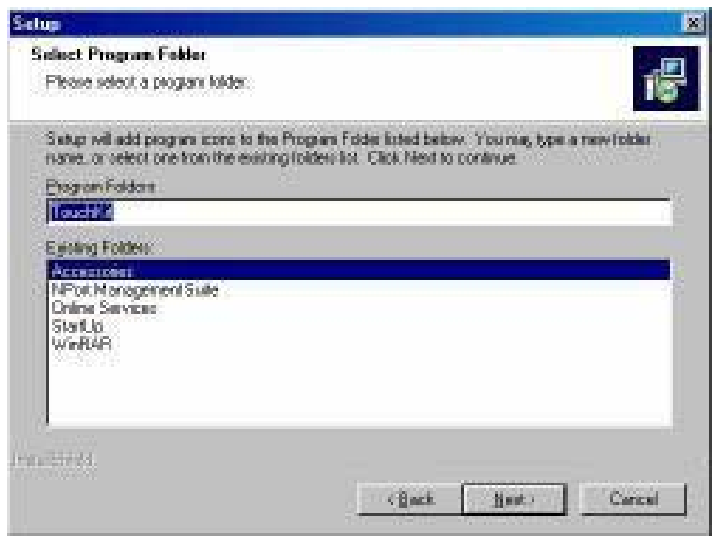
6.Choose the setup type that best suits your needs. There are two **TouchKit** accessory utilities for choosing, **Rotation Monitor Utility and Shutdown Utility**. Users can install the utility they want by checking the box. Then Press **[Next >]** to continue installation.



7.Select the appropriate folder where set-up files will be installed. Then Press **[Next >]** to continue installation.


Setup
Choose Destination Location
Select folder where Setup will install files.
Setup will install TouchKit in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\TouchKit
Browse...
< Back
Next >
Cancel

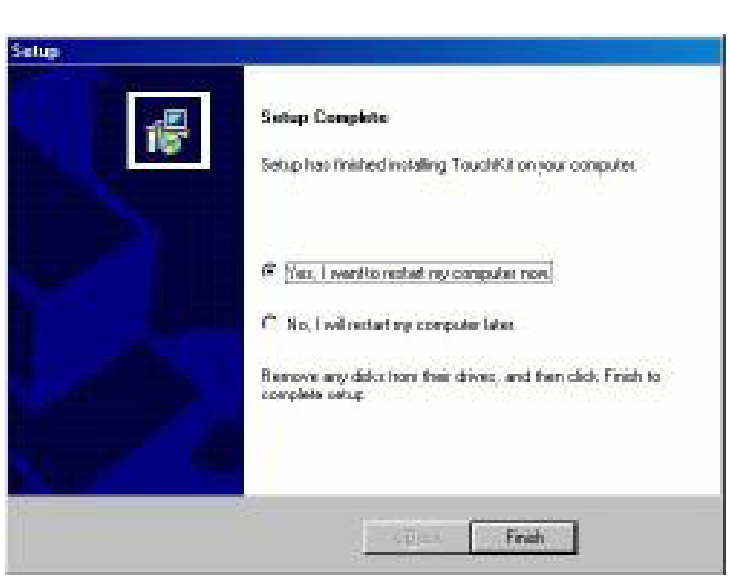
8.Then type in the name of program folder for **TouchKit** or press **[Next >]** to continue. There will be a default name for it.

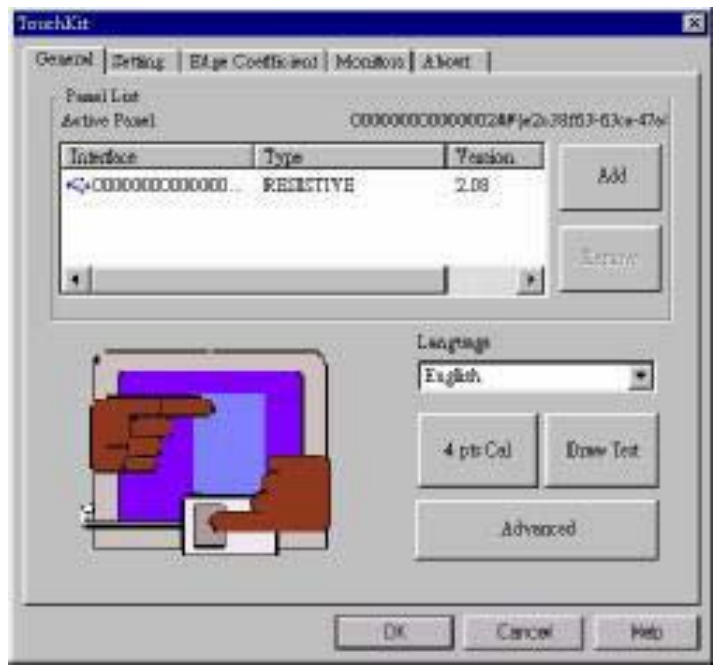

Setup
Select Program Folder
Please select a program folder.
Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the existing folders list. Click Next to continue.
Program Folders:
TouchKit
Existing Folders:
Accessories
NPort Management Suite
Online Services
StartUp
WinRAR
< Back
Next >
Cancel

During driver installation, the setup program will scan COM port for RS232 **Touchkit** controller. Once the controller was scanned, the setup program will display a dialog as

Click **Yes** to add the controller on the specified COM port automatically.

9.Windows is copying files to disk and the setup is complete. It will request re-boot computer. Press **[Yes >]** to re-boot immediately or **[No >]** to re-boot later. The installation will not be finished until system re-boot.

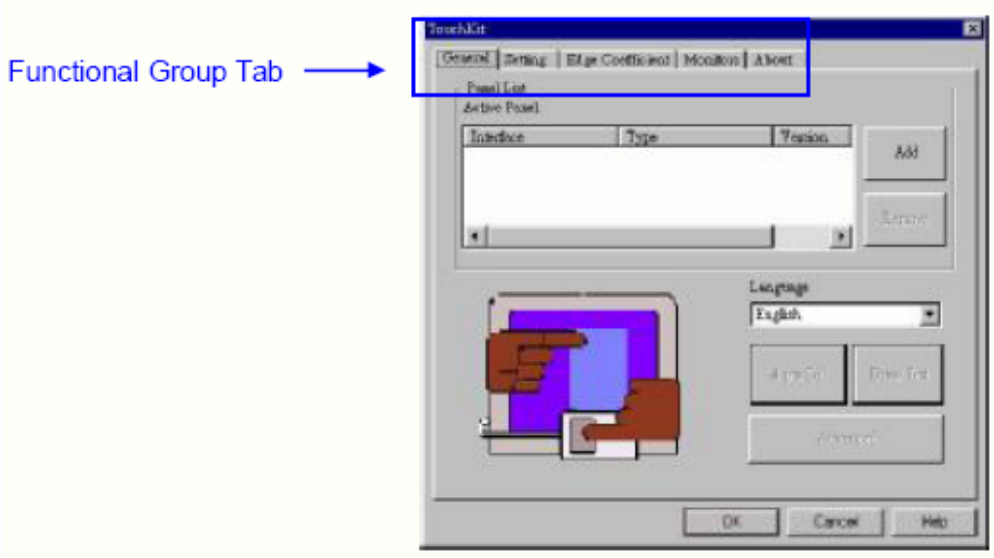

Setup
Setup Complete
Setup has finished installing TouchKit on your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
< Back
Finish



10. Setup is complete. After TouchKit installation, the USB device will be found automatically as soon as it was plugged into the computer. Then users can see the new device on the application program window. And, the program will remove the USB Device automatically as soon as it was unplugged. (USB device is not supported for Windows95)

Configuration Utility and Right Button Emulator

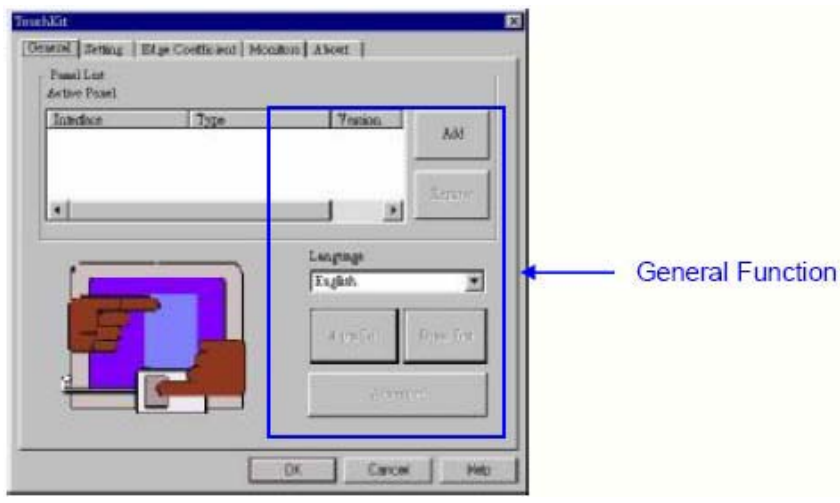
There are five property pages in **TouchKit** utility, and they are **General, Setting,Edge coefficient, Monitors and About** . Each property page contains different functions for users to do the adjustments. Therefore, users can easily manage all the **TouchKit** controllers through **TouchKit** utility.



General

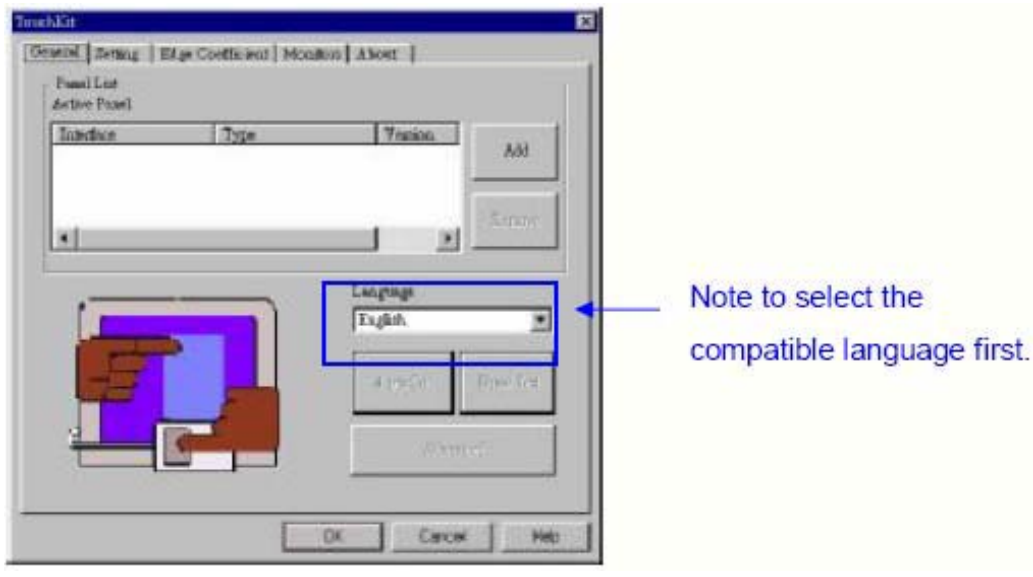
General property page contains the functions of language selection, **devices add/ remove,**

4 points calibration, Draw test and **Advanced**



<Language>

TouchKit supports multi-language user interface. Users could select native language that is compatible to operation system support. For example, if the operation system is a traditional Chinese version, users could see the normal display words under the traditional Chinese and English mode. There are ten different languages, **English, Traditional Chinese, Simplified Chinese , French , Spanish , German , Japanese, Italian, Korean and Dutch** supported in this feature of **TouchKit**.

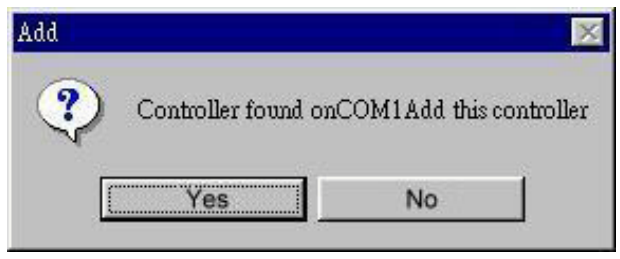


Select the compatible language first or users may not see the normal display of each button.

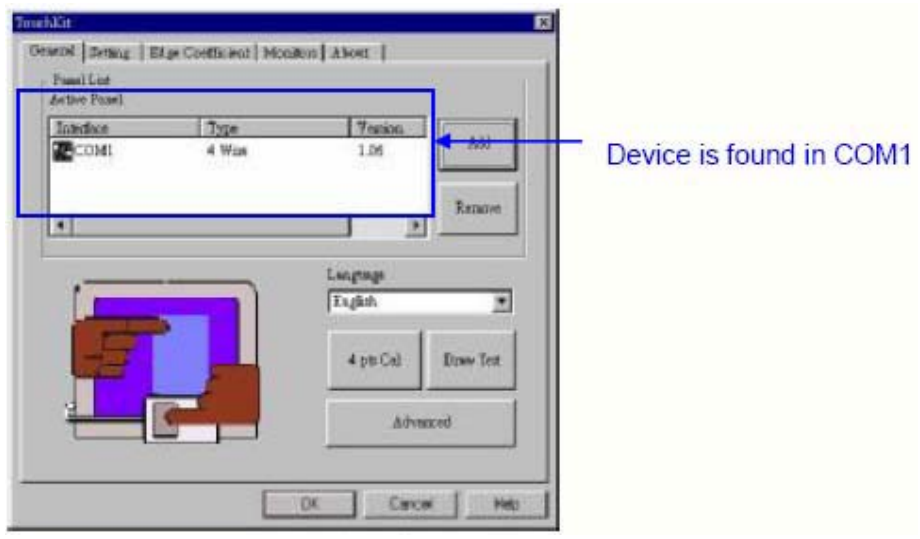
<Add> / <Remove>

Please check the touch panel devices (including its controller) are equipped well, Then click **[Add]** button to add all of those RS-232 and PS/2 devices to the **Panel List** dialogue box

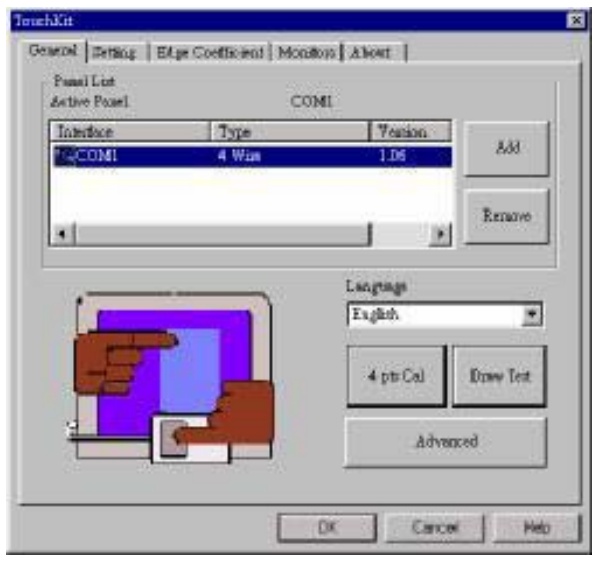
.



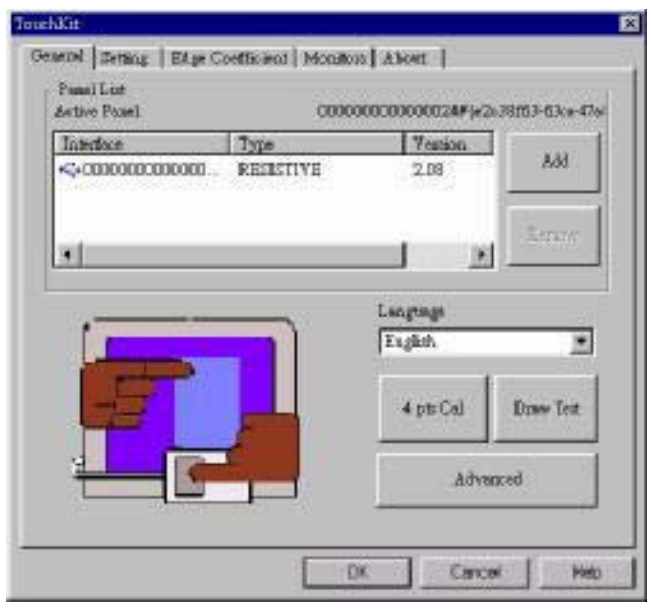
There is one devices found. Press **[Yes]** to continue.



The controller is displayed on the Panel List box. Users can get the information of interface, type, firmware version and baud rate for each controller. Select one device after added more than one device at the panel list window. The one selected will activate the panel, and remember to do the calibration before starting to use touch panel.



But, for hot-swapping USB touch controller, it will be added automatically as soon as it was plugged into the computer. Then users can see the new device on the application program window. And, the program will remove the USB touch controller automatically as soon as it was unplugged. (**USB device is not supported** for **Windows95**)



There are three buttons, **[4pts Cal] [Draw Test] [Advanced]**, at the lower section of the **General** property page.

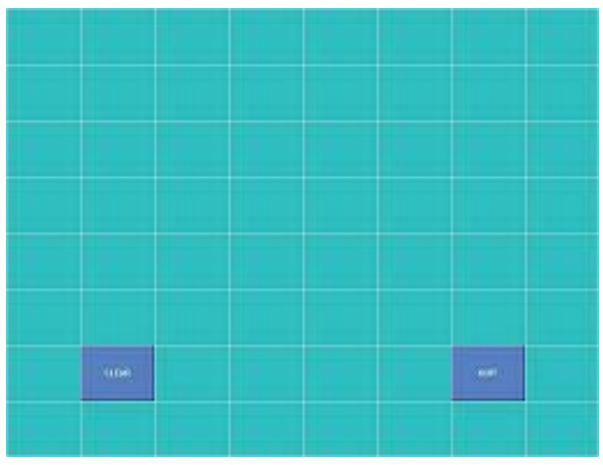
<4pts Cal>

Correct 4 point locations on screen with the panel. Press **[4 pts Cal]**, screen displays as follows.

Touch the blinking symbol on panel until beep or stop blinking.

<Draw Test>

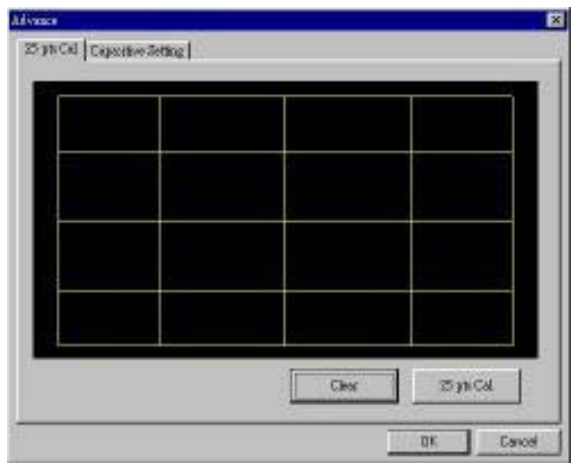
Test the drawing position related to the display screen on panel. Click on the **[Draw Test**] button. There will be a squared blue display showing.



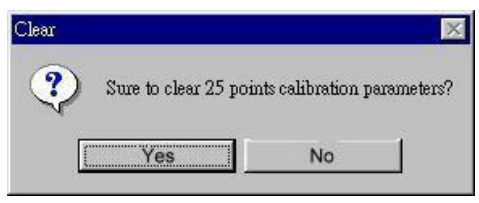
In drawing test window, users can click **[Clear]** button to clear the window. Also, users can click **[Quit]** or press mouse right button to quit from the drawing test.In drawing test window, users can verify the panel linearity, calibration capability, and drawing line quality.

<Advanced>

Touchkit provide more accuracy 25 points calibration for touch sensor. In addition, **Touchkit** provides controller setting for capacitive touch sensor. If the capacitive controller is selected, a capacitive setting property page appears on the advanced sheet. In general case, it does not need to do 25 points calibration other then bad linearity sensor.



Press **[Clear]** to clear the previous calibration records.



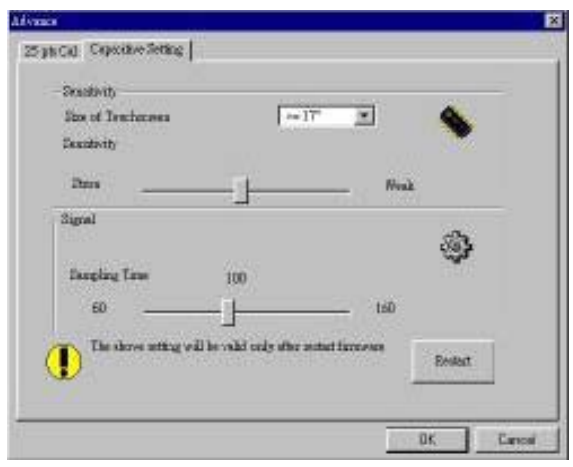
Press **[Yes]** to clear previous records. The record will become default record.

Press **[25ptCal]** to do 25 points calibration. Correct 25 point locations on screen with the panel.

Touch the blinking symbol on panel until beep or stop blinking.

After the calibration, the new record will overwrite the old one.

If the selected controller is capacitive type, an extra property page for capacitive setting adjustment shown as below:



Please select property size of capacitive screen first, and press **[Restart]**

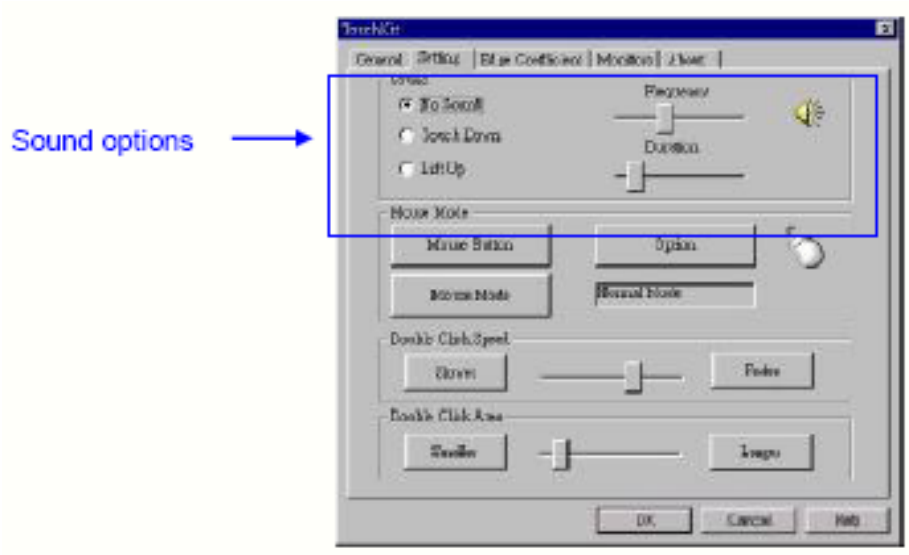
The capacitive controller will restart, and do not touch the screen before the warning message disappears

Warming: Do not adjust the sensitive and sampling time without RD help

Setting

There are three functional groups in **Setting** Property page, and at the upper section of the property page is **sound option**; at the middle section is Mouse Mode; and at the lower section is **Double Click Adjustment**.

The Sound Options provide users the click feedback while touching the panel. Select preferred option first.



<No Sound>

Users could choose to make no soun d while using the touch panel.

<Touch Down>

The system will make a sound while touching the panel.

<Lift Up>

The system will not make any sound until finger leaves the touch panel.

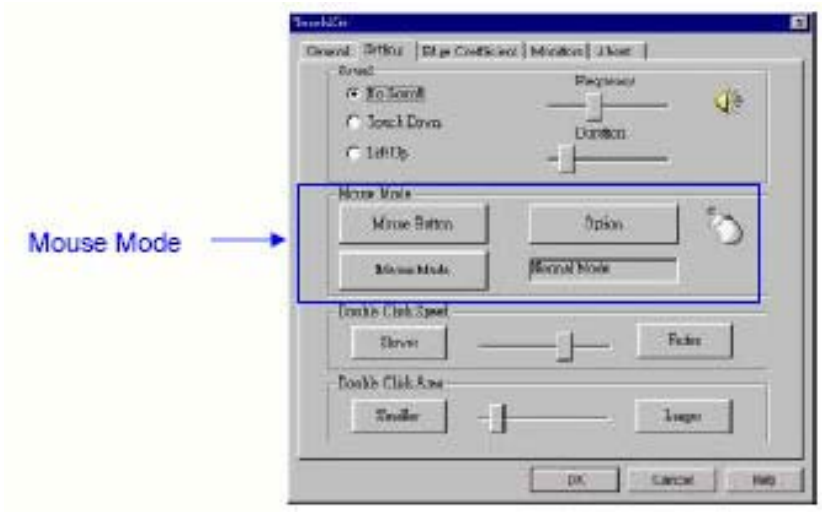
<Frequency>

Sound frequency, drag the cursor from left to right is low to high.

<Duration>

Sound duration, drag the cursor from left to right is short to long.

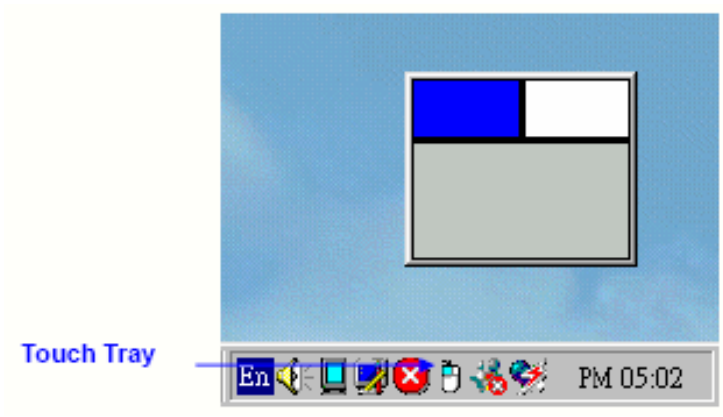
The **Mouse Mode** provides users different operating options. They are as follows:



<Mouse Button>

Click it to **show / hide Touch Tray** on the right bottom corner of the desktop. The touch panel system starts with the computer booting, and a mouse icon shows in the taskbar.

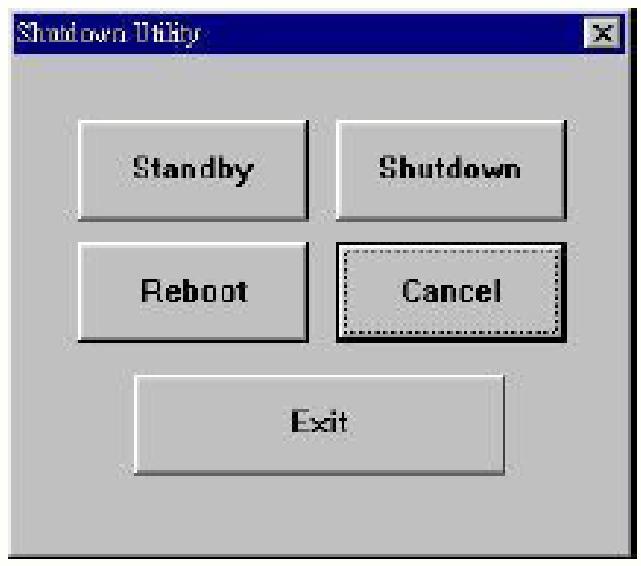
Users can choose **show or hide Touch Tray** from the mouse icon in the taskbar. Just click the mouse icon to choose show or hide.



Change **right / left** button by clicking the upper small rectangular box of **Touch Tray** . Blue area expresses what button has been selected.

<Shutdown utility>

Click on shutdown utility in the task bar



Shutdown utility dialog

There are five modes in shutdown utility for user convenience.

[Standby] to enter standby mode that saves power consumption.
[Shutdown] to turn off PC.
[Reboot] to restart PC.
[Cancel] to escape from the Shutdown utility dialog.
[Exit] to disable the Shutdown utility.

Please notice that Windows NT does not support this function.

<Mouse Mode>

There are three kinds of mouse mode users could choose,

[Normal Mode]

It provides all the mouse functions, including the dragging function.

[Click on Touch]

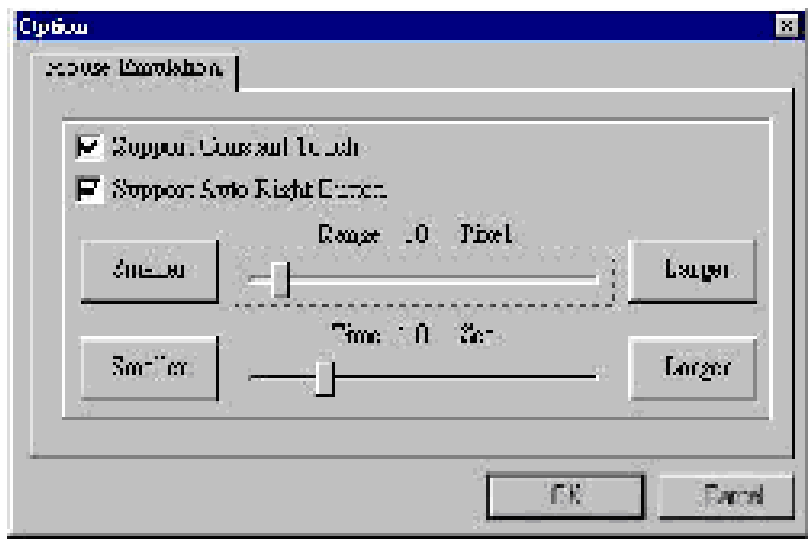
Click action is executed as soon as users touch the panel.

[Click on Release]

Click action will not be executed until finger leaves the panel.

<Option>

Touchkit provides an option for advanced Mouse Emulation setting. When the **Option** button is pressed, a setting property sheet will be popped up. **Support Constant Touch** and **Support Auto Right Button** check boxes are shown in the property sheet to **enable / disable Constant touch** and **Auto right button** support.



[Constant Touch]

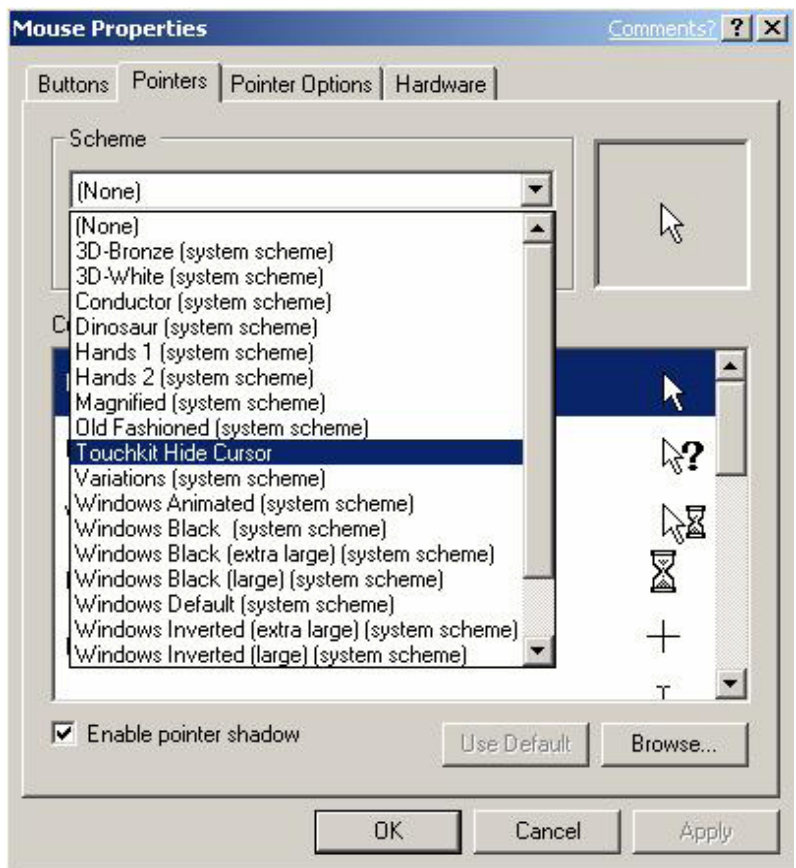
Enable Constant Touch to force driver to stop reporting touch point when the movement is within the range which users can adjust. Therefore, the user can see a stabilized cursor instead of a chattering cursor when users touch the same point with unwanted noise.

[Auto Right Button]

Enable **Auto Right Button** to force driver to report a **right click mouse event** to OS when users do a continuing touch till time out. It no longer needs to touch the **right button** in the **Touch tray** to activate a **right click.** This feature makes users to do **right click** more easily with touch screen.

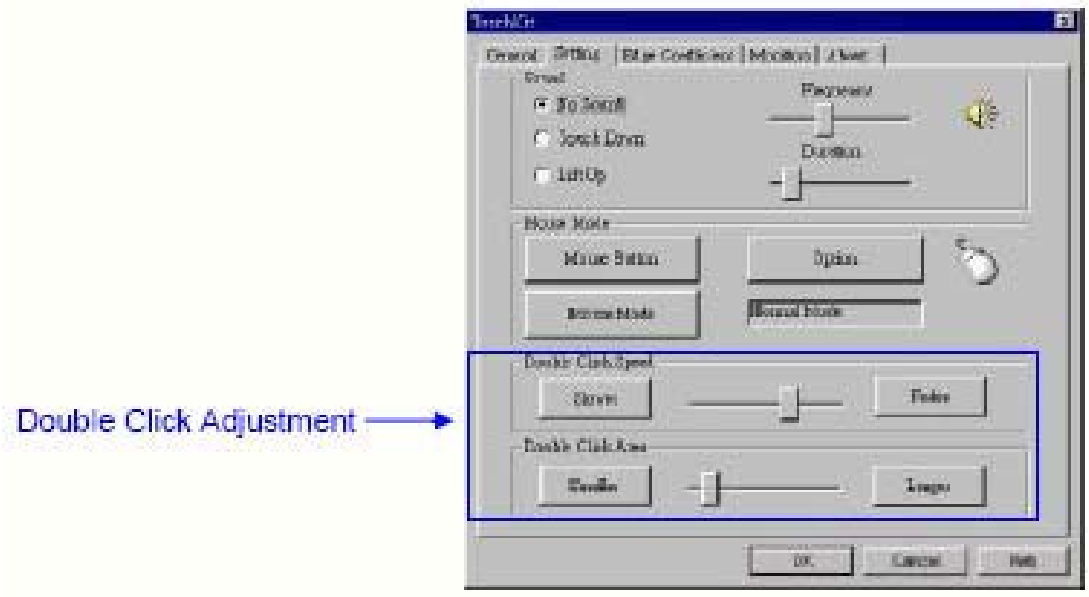
<Cursor Visibility>

Cursor visibility function provides users to hide the cursor in the display. Please go to **Start / Control Panel / Mouse / Pointers / Scheme** , and choose **TouchKit Hide Cursor**. Press **[Apply]** to make setting change, and press **[OK]** to escape the property page.



If users want to cancel the function of TouchKit Hide Cursor, do the steps again and choose the other scheme.

The **Double Click adjustment** provides users to set up the tolerance while double clicking. They are as follows :



<Double Click Speed>

Double Click Speed is the double click response time for Windows system.

Users can adjust the proper double click for easy double click by touch panel.

<Double Click Area>

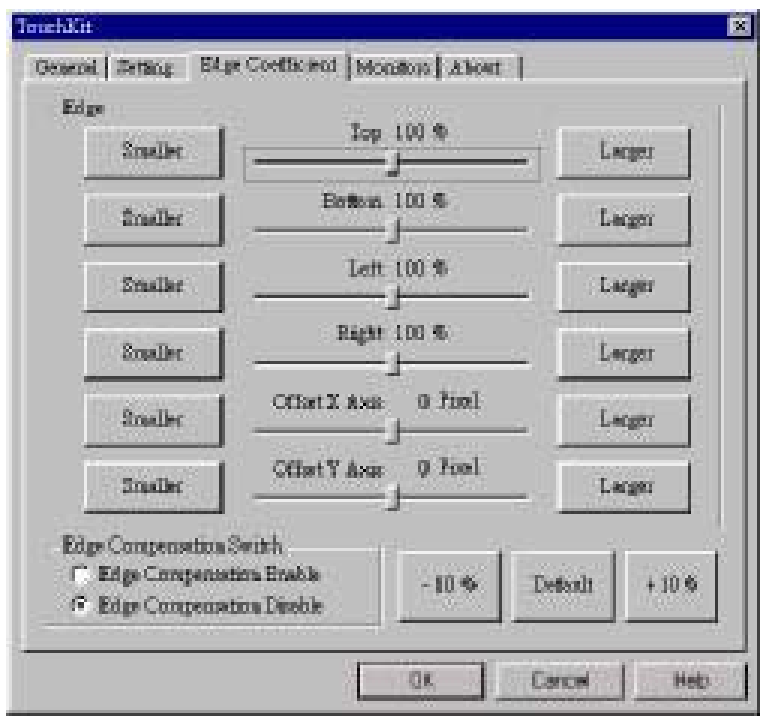
Each one touch has its own touch tolerance once someone may not fix in one point. So if users set the Double Click Area to **<Smaller>**, the panel will be very sensitive about micro-move while users want to fix on a point. If users set it to **<Larger>**, it tolerates the larger touch point movement while users want to point at a fixed position.

Edge Coefficient

Edge Coefficient property page contains the functions of **Edge Compensation for**

Top, Bottom, Left, Right, X Axis and Y Axis

.



In some case, if it is difficult to touch items at the edges of the touch panel, users can set adjustment to reach the edges of the screen image.

<Top>

If users set the Edge to **<Smaller>**, **TouchKit** will reduce the horizontal position of the top edge. If users set the Edge to **<Larger> , TouchKit** will extend the horizontal position of the top edge.

<Bottom>

If users set the Edge to **<Smaller>, TouchKit** will reduce the horizontal position of the bottom edge. If users set the Edge to **<Larger>, TouchKit** will extend the horizontal position of the bottom edge.

<Left>

If users set the Edge to **<Smaller , TouchKit** will reduce the vertical position of the left edge. If users set the Edge to **<Larger , TouchKit** will extend the vertical position of the left edge.

<Right>

If users set the Edge to **<Smaller>, TouchKit** will reduce the vertical position of the right edge. If users set the Edge to **<Larger>, TouchKit** will extend the vertical position of the right edge.

In some case, cursor will be behind the finger when users touch the panel. If users can not see the cursor when they touch down on the panel, users can set X Axis or Y Axis to move the cursor.

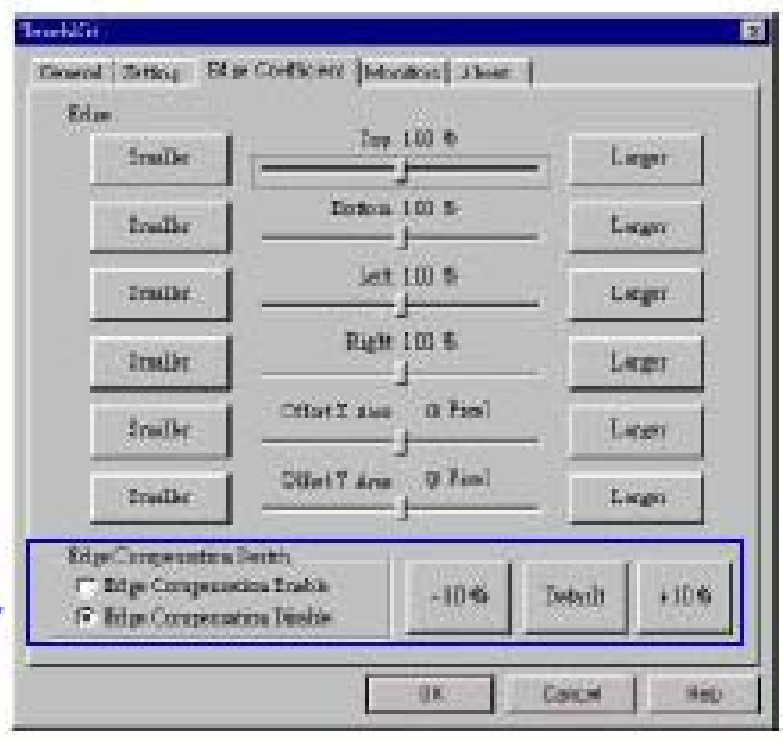
<Offset X Axis>

If users set the Offset X Axis to **<Smaller>**, cursor will be moved a pixel of X Axis to left. If users set the Offset X Axis to **<Larger>**, cursor will be moved a pixel of X Axis to right.

<Offset Y Axis>

If users set the Offset Y Axis to **<Smaller>**, cursor will be moved a pixel of Y Axis to top. If users set the Offset Y Axis to **<Larger>**, cursor will be moved a pixel of Y Axis to bottom.

Edge Compensation Switch



<Edge Compensation Switch>

Users can choose Edge compensation **Enable / Disable** from left bottom corner of **Touchkit** Utility.

Using **+10% and -10% button** to adjust the smaller or larger of edge. If users press **+10% button**, the top, bottom, left and right edges will extend 10% of orientation to touch screen, and cursor will be moved 10 pixel of X and Y Axis to right and top. If users press **-10% button** , the top, bottom, left and right edges will contract 10% of orientation to touch screen, and cursor will be moved 10 pixel of X and Y Axis to left and bottom.

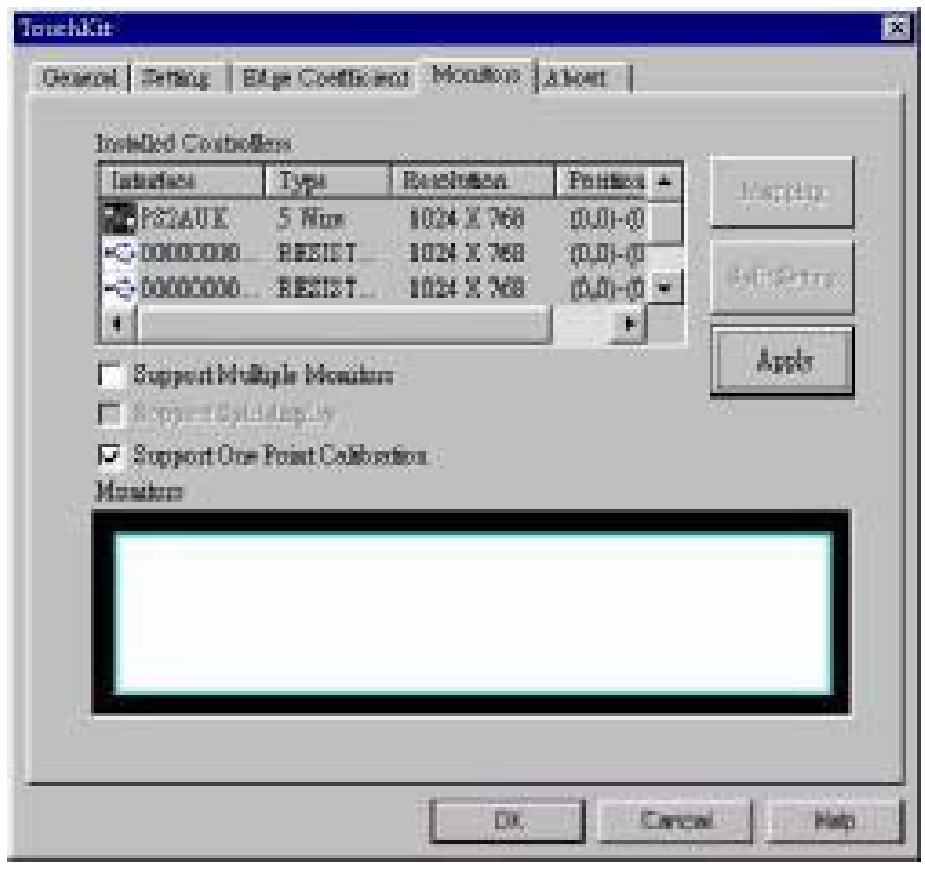
If users want the value back to the default value, choose Default button.

Monitors

There are three functions in this property page, and they are **Multiple Monitors, Split Monitor** and **One point Calibration**. Such a trendy and yet innovated design provides viewing pleasures, viewing flexibility and convenience to users.

<Multiple Monitors>

To configure the mapping relationship between the monitors and the touch panels, select the monitor page as below.



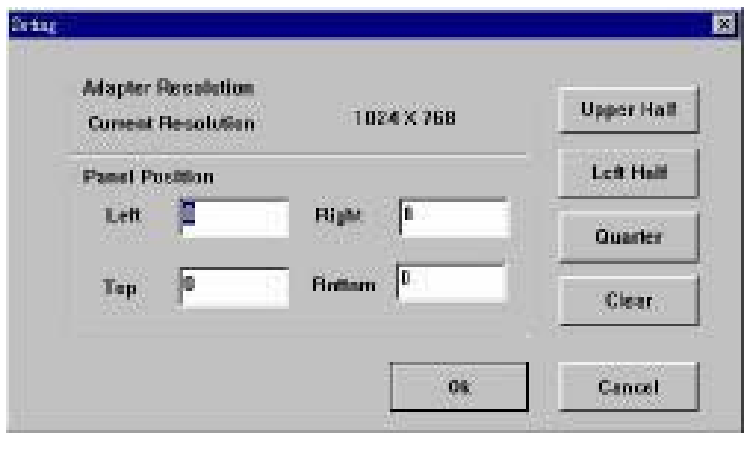
Set the check box (Use Multiple Monitors) to enable multiple monitors mapping.

Uncheck this box will disable multiple-monitor configuration, and all of the touch panel controllers will be mapped to the primary monitor. The gray shadow area is the monitor mapped the selected controller/panel. The button **[Mapping]** is used to find the mapping relationships between the monitors and touch panel controllers. Press the **[Mapping]**,the software will guide users to touch the corresponding monitor to obtain the mapping relationship.

After finish monitor mapping, Press **[Apply]** to apply the mapping relation.

<Split Monitors>

To use the Split Monitor function, users need to select which controller you want to launch this function, then check the Multiple Monitors box and **Split Monitor** at the same time as showing as the follow picture. Press the [Split Setting] button to set up the activate area.



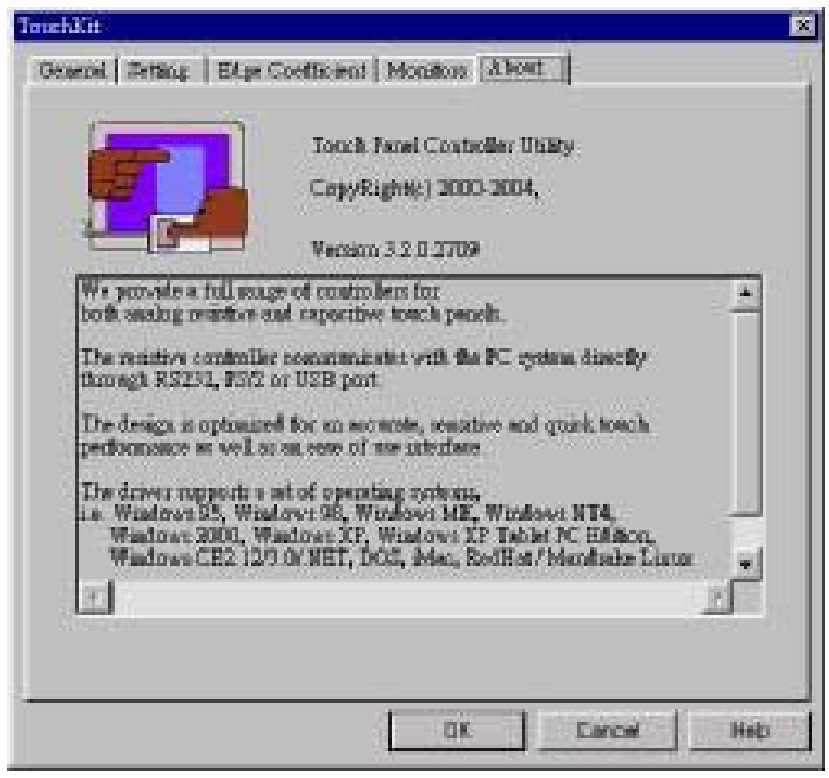
It shows the current resolution of display and users can set up the activate area by inputting the value by yourself or use the default button **[Upper Half], [Left Half]** or **[Quarter]**.The default value of panel resolution should be full screen as Left: **0**, Right: **0**, Top: **0** and Bottom: **0**.

<One Point Calibration>

TouchKit utility provides a fast tool to identify the touch screen orientation when the monitor display was rotated by 90 degrees. Enable this **One Point Calibration** feature, **Touchtray** will pops up this **One Point Calibration** tool for users to identify and correct the touch screen / monitor orientation whenever the monitors was rotated by 90 degrees. Disable this feature , **Touchtray** does not pop up this **One Point Calibration** tool. Then, the user has to do four points calibration to correct the orientation whenever the monitor was rotated.

About

Information about **TouchKit**.


TouchKit
General
Setting
Edge Coefficient
Monitors
About
Touch Panel Controller Utility
CopyRight(c) 2003-2004,
Version 3.2.0.2709
We provide a full range of controllers for
both analog resistive and capacitive touch panels.
The resistive controller communicates with the PC system directly
through RS232, PS/2 or USB port.
The design is optimized for an accurate, sensitive and quick touch
performance as well as ease of use interface.
The driver supports a set of operating systems,
i.e. Windows 95, Windows 98, Windows ME, Windows NT4,
Windows 2000, Windows XP, Windows XP Tablet PC Edition,
Windows CE2.12/3.0/.NET, DOS, Mac, RedHat/Mandrake Linux
OK
Cancel
Help

MONITOR ROTATION SETTING

TouchKit driver package for Windows 98/ME/2000/XP provides two easiest ways to rotate the touch panel while the display is rotated.

- Rotating display by way of nVidia or ATI driver
- Rotating display by way of Pivot.

4.1 Rotating display by way of nVidia or ATI driver

1. After activating the rotation of nVidia or ATI driver, there will be one blinking symbol show as the following picture. Touch near the blinking symbol until stop blinking, and the touch panel will rotate itself.

One touch blinking symbol adjustment

2. However, 180 degree rotation of touch panel can not be done in one step, users need to rotate 90 degree twice.

4.2 Rotating display by way of Pivot

There are two ways to rotate the display by way of Pivot.

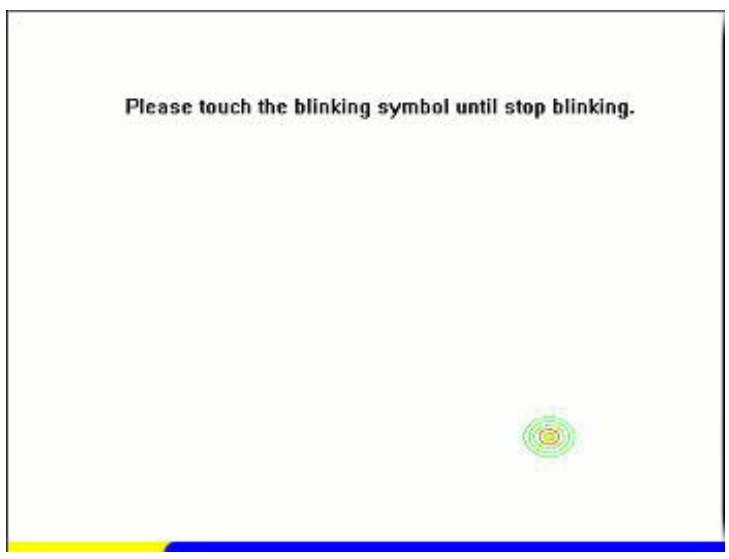
- Rotating display by way of Pivot hotkey or function menu
- Rotating display by way of Rot Tray icon provided by **TouchKit.**

< Rotating display by way of Pivot hotkey or function menu >

1. To rotate the display, please install Pivot pro 6.05 first. Then reboot PC to Activate Pivot.

2. There will be a pivot icon in the task bar. Users can click on it, and users can choose four angles: 0 degree, 90 degree, 180 degree, 270 degree to rotate the display.

3. After choosing the angle users want to rotate, there will be one blinking symbol showing as the following picture. Touch this blinking symbol until stop blinking, and the touch panel will rotate itself.



One touch blinking symbol adjustment

4. However 180 degree rotation of touch panel can not be done in one step, users need to rotate 90 degree twice.

< Rotating display by way of RotTray icon provided by TouchKit>

1. To rotate the display, please install Pivot pro 6.05 first. Then reboot PC to Activate Pivot.

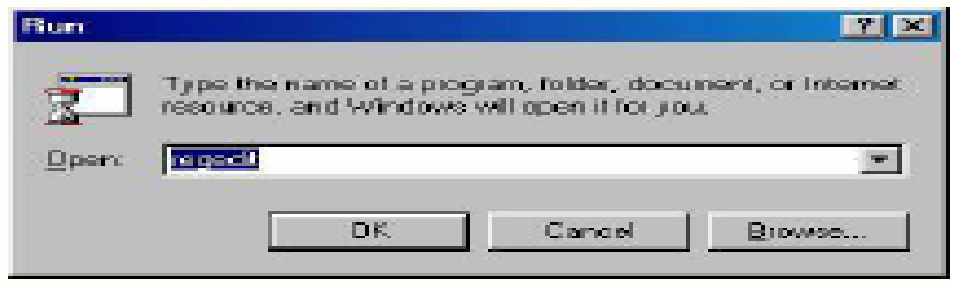
2. Users will see **RotTray** icon in the task bar.

RotTray icon

3. Clicking on **RotTray**, it will call Pivot to rotate the display and touch panel 90 degree at the same time. Clicking it again, it will rotate another 90 degree to 180 degree. Every click on **RotTray** , display will rotate clockwise. Recalibration and one symbol adjustment won't be necessary anymore.

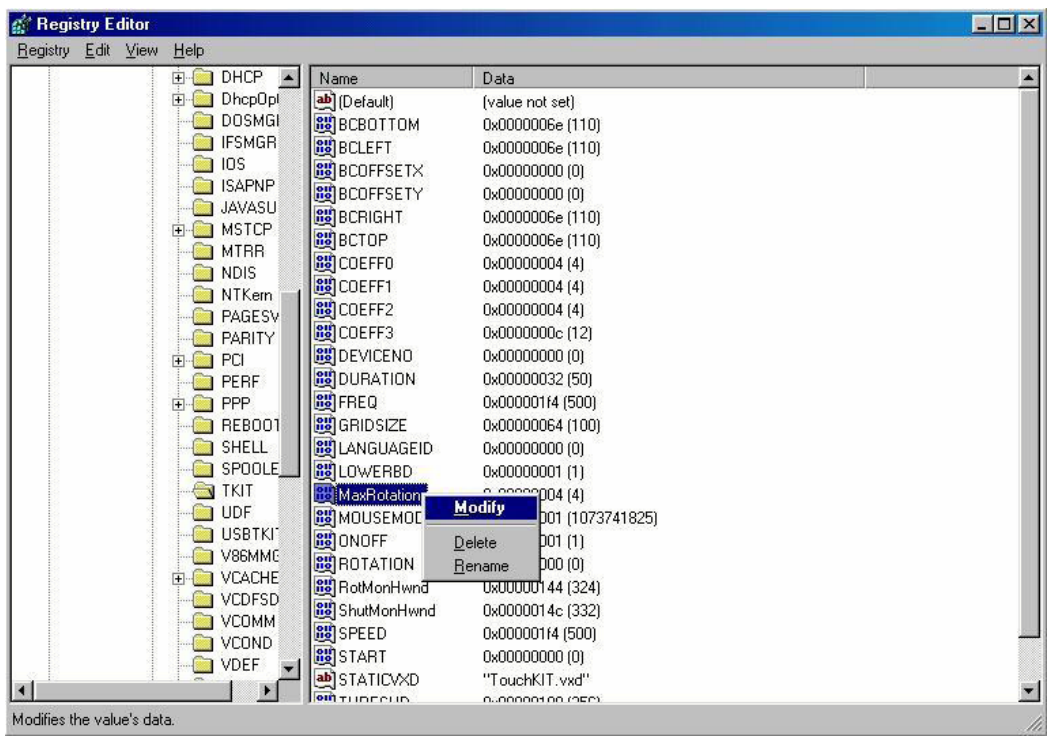
4. However this version of **RotTray** is design for Pivot pro 6.05. If users want to use older version of Pivot, like Pivot 5.1, users need to amend the value of windows registry. The next step is an example for setting Pivot 5.1 on Win98.

5. Go to **Start / Run**, and execute regedit.



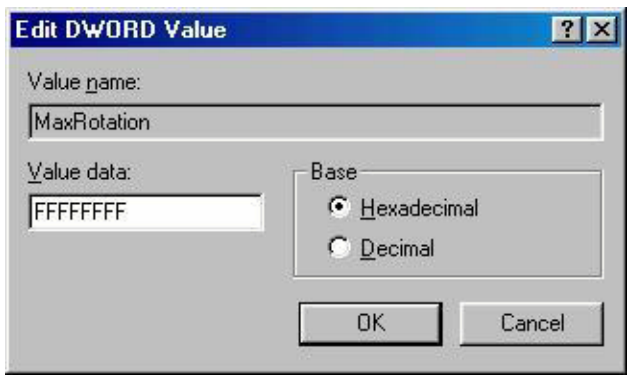
Press [OK] to execute

6. For **Windows 95/98/ME OS**, The Registry Editor will show as the follow picture. Then go to HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\VxD\TKIT.Right click on the **MaxRotation**, and choose Modify.



Right click on MaxRotation to Modify Value data

7. Choosing the Hexadecimal Base, and replace the value data "4"(default) with "FFFFFFFF".



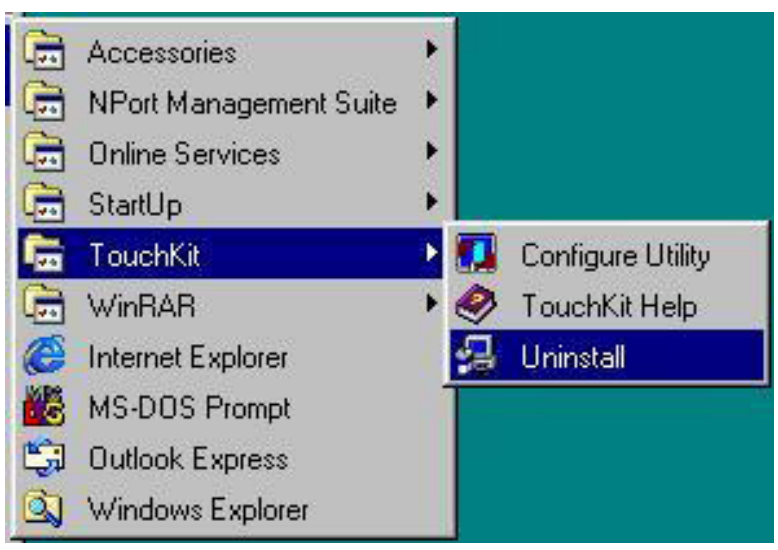
Pressing **[OK]** to confirm.

8. Here below are the value data for different version of Pivot:

Version of Pivot	Available Angle	Value Data
Pivot pro 6.05	0, 90, 180, 270	4 (default)
Pivot 5.1	0, -90	FFFFFFFF
Other Version	0, 90	2

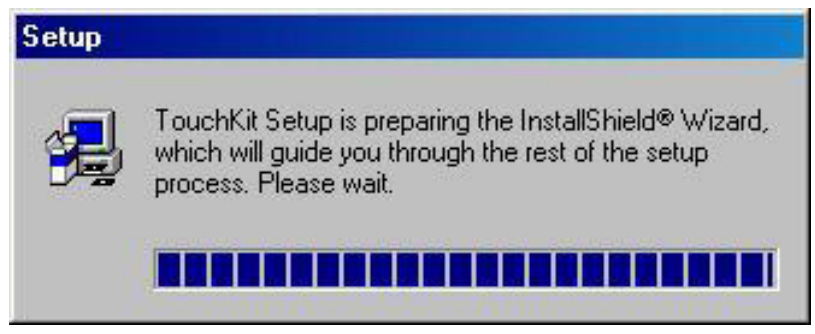
Follow these steps to uninstall **TouchKit**.

1.G



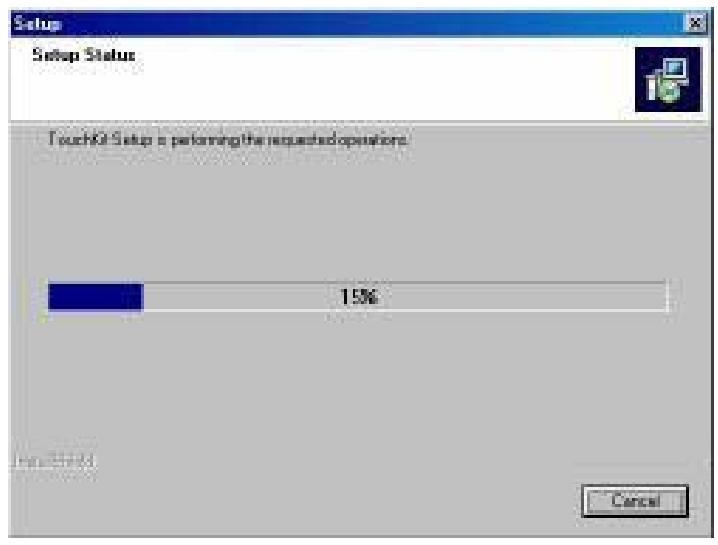
o to **Start / Programs / TouchKit / Uninstall** , and exe cute it.

2. **TouchKit** setup dialog appears, and prepares to uninstall.


Setup
TouchKit Setup is preparing the InstallShield® Wizard, which will guide you through the rest of the setup process. Please wait.

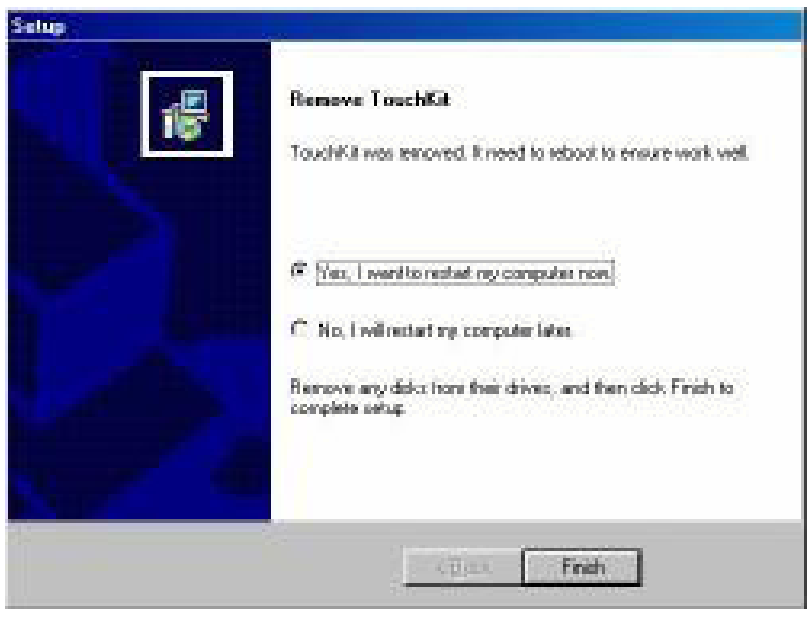
3. Confirm dialog, press **[OK]** to start un-installation; **[Cancel]** to cancel uninstallation.

4. Start to uninstall **TouchKit**.

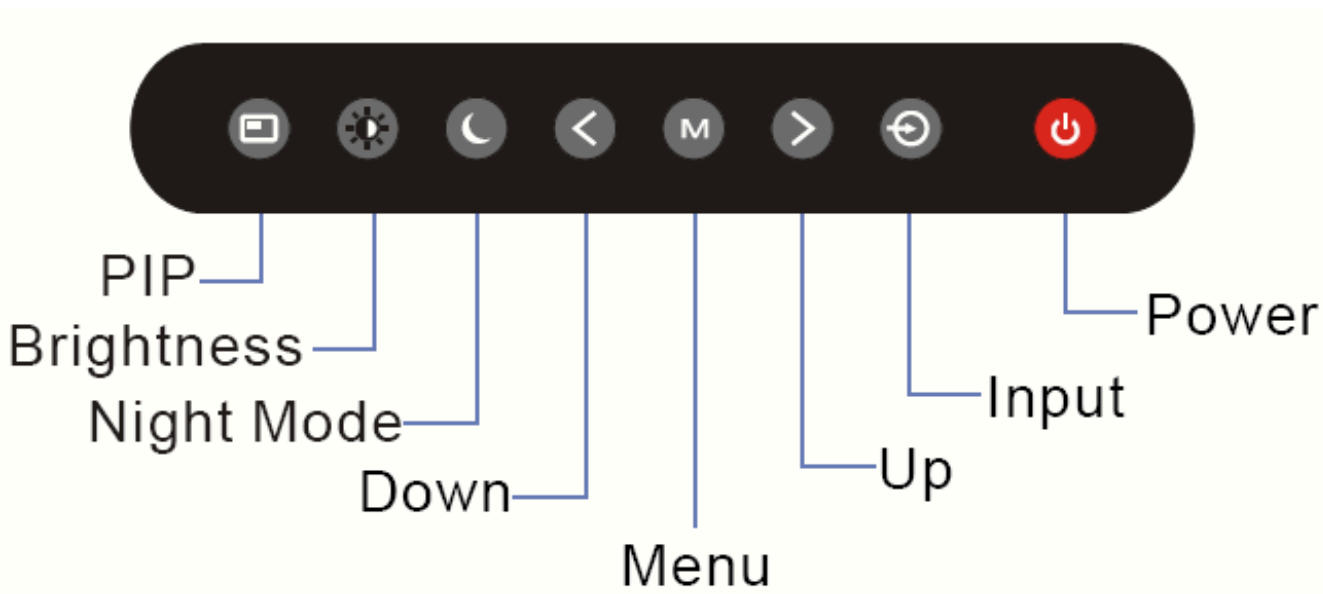


If users do not want to uninstall **TouchKit** at this moment, press **[Cancel]** to terminate the uninstall process.

5. **TouchKit** will not be removed until system re-boot. Press **[Yes]** to re-boot immediately or **[No]** to re-boot later.


Setup
Remove TouchKit
TouchKit was removed. It need to reboot to ensure work well.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
Finish

5.0 OSD OPERATIONS



Introduction

Your **Acubrite 21-Nav** Sunlight Viewable display can be controlled using the On Screen Display (OSD) menu and/or the 8 buttons on the front bezel of the unit.

The OSD menu enables you to change the way in which your display is set up and is accessed using the Menu button.

Using the buttons

Each of the 8 buttons on the front bezel of your display has an input and a control function.

Input functions enable you to select the type of signal input to the display.

Control functions enable you to change the appearance of the display.

Power

Power ON Key

To power your monitor ON, just need to press this button and it will delay the power on sequence around 3 seconds. This is Acubrite 21-Nav's brand new design to well protect your Acubrite 21-Nav Sunlight Viewable display damaged in the surge voltage from the engine.

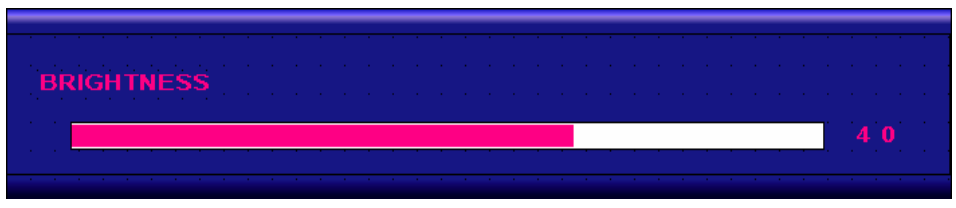
Power OFF Key

To power your monitor OFF, just need to press this button and it will also delay the power off sequence around 3 seconds.

Pressing the power button will display a list of what input for the main screen is associated wit h each button. This is jus t a reminder and is not part of the input selection process.

BRIGHTNESS Key

When you press the BRIGHTNESS Key, the screen will show the following image



You can press the **UP /DOWN Key** to do the screen brightness adjustment. When the brightness achieve 50 and keeping pressing "**UP**" Key, the dimming will keep the brightness at 50. When you dimming down to brightness 1 and keeping pressing the "DOWN" Key, the dimming will keep the brightness at 1.

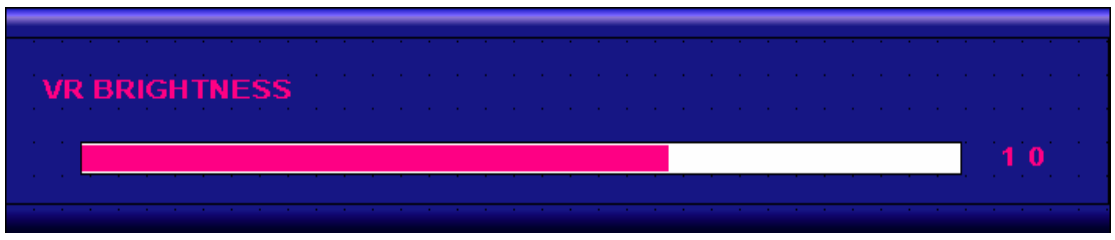
If you keep pressing "**BRIGHTNESS**" Key and hold it, the brightness will appear as following status:
. . . .2 → 1 → 2 → 3 →. . . → 48 → 49 → 50 → 49 → 48 → . . . .
And if you release the "BRIGHTNESS" Key around 5 seconds with any action, the brightness bar will disappear.

When you press "**BRIGHTNESS**" Key and other Key (not including Up/Down Key), the **BRIGHTNESS** status bar image will disappear.

When you press **NIGHT MODE KEY** or choose **VR** adjustment, the **BRIGHTNESS KEY** will be no function if you press it.

VR BRIGHTNESS Key

If you want to enable the **VR** Brightness function, you need to press "**MENU" KEY** and then choose **VR** function. When you rotate the **VR** knob, the **VR BRIGHTNESS** status bar will appear as below image (dimming range from 1~50):



When you enter the **VR BRIGHTNESS** mode, it will be no function if you press the **BRIGHTNESS KEY**. And if you release the **VR** knob without any action around 5 seconds, the **VR BRIGHTNESS** Status bar image will be closed.

When you enter the "**NIGHT MODE**" or choose "**BRIGHTNESS"** Key for brightness adjustment, it will be no function if you control the **VR** knob.

When you press **"MENU", "DISP", "PIP"** Key, you will enter the menu item selection. And the **VR BRIGHTNESS** status bar image will be closed.

Any modified or changed parameter setting will be automatically saved if you power off or **Exit** the **BRIGHTNESS** status bar.

NIGHT MODE KEY

When you press the "**NIGHT MODE**" KEY, the dimming will be down to under 0.5 nit directly. And if you press **"BRIGHTNESS**" KEY or **"VR"** knob at this moment, it will be no function until you press the "**NIGHT MODE**" KEY again to release this restriction.

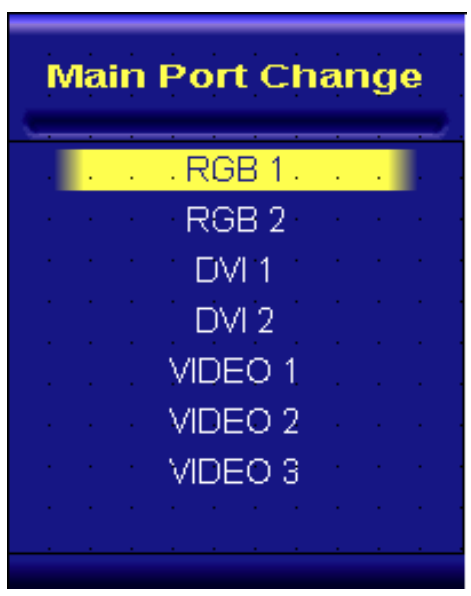
When you press "**MENU", "DISP", "PIP**" Key, you will enter the menu item selection.

Any modified or changed parameter setting will be automatically saved if you power off or **Exit** the **NIGHT MODE.**

UP **/ DOWN** **KEY**
It works as menu item selection use, the "**UP**"KEY can be used as "**RIGHT**" KEY and the "**DOWN**" KEY can be used as "**LEFT**"KEY.

INPUT KEY

When you press “**INPUT**” KEY, the screen will pop up the following image:



You can press the “**UP”/ ”DOWN**” KEY for the menu item selection above. It will remain at “**VIDEO 3**” position if you keep pressing “**DOWN**” KEY to the end. And it will also remain at “**RGB1**” position if you keep pressing **“UP**” KEY to the end.

When you press and hold the “**INPUT**” KEY, the menu screen will show as
.... RGB1→ RGB2 →. . → VIDEO3 → VIDEO2 → . .

If you release the “**INPUT**” KEY for 5 seconds without any action, the menu selection screen will be closed. And it will remain at the item which you’d selected.

When you press “**MENU”, “BRIGHTNESS”, “PIP**” Key, you will enter the menu item selection.

Any modified or changed parameter setting will be automatically saved if you power off or **Exit** the menu setting screen.

PI P KEY

1. Default main screen shows at **RGB1 & RGB2 Press “PIP” KEY** Figure 1

2. Default main screen stays at **DVI1 & DVI2 Press “PIP” KEY** Figure 2

3. Default main screen stays at **VIDEO 1 Press “PIP” KEY** Figure 3_1

4. Default main screen stays at **VIDEO 2 Press “PIP” KEY** Figure 3_2

5. Default main screen stays at **VIDEO 3 Press “PIP” KEY** Figure 3_3

PIP Function Supporting Table

Sub / Main	RGB 1	RGB 2	DVI 1	DVI 2	VIDEO 1	VIDEO 2	VIDEO 3	
RGB 1			OK	OK	OK	OK	OK	Figure 1
RGB 2			OK	OK	OK	OK	OK	Figure 1
DVI 1	OK	OK			OK	OK	OK	Figure 2
DVI 2	OK	OK			OK	OK	OK	Figure 2
VIDEO 1	OK	OK	OK	OK		OK	OK	Figure 3_1
VIDEO 2	OK	OK	OK	OK	OK		OK	Figure 3_2
VIDEO 3	OK	OK	OK	OK	OK	OK		Figure 3_3

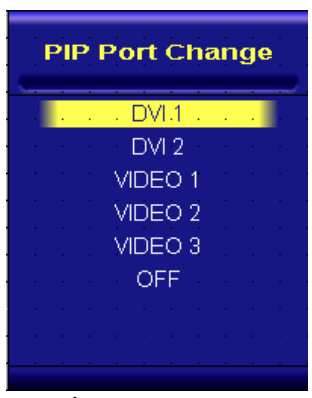


Figure 1

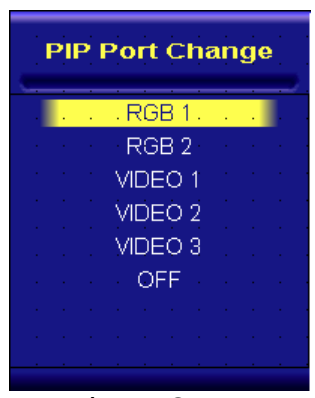


Figure 2

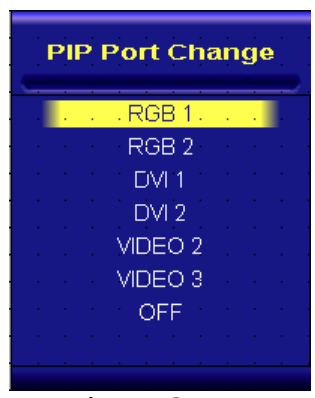


Figure 3_1

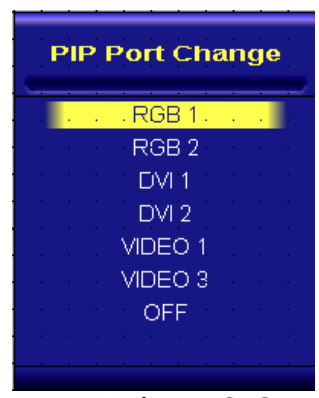


Figure 3_2

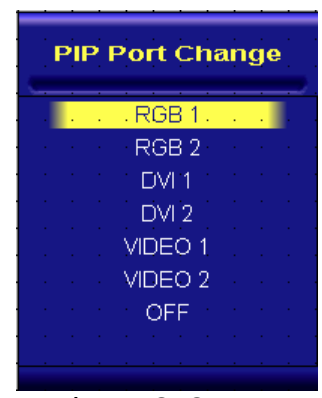


Figure 3_3

When you enter the "**PIP Port Change**" screen, the status bar will remain at "**OFF**" position if you keep pressing the "**DOWN**" KEY to the end. At the other hand, the status bar will remain at top item of each menu if you keep pressing the "UP" KEY to the end.

When you press and hold the "PIP" KEY, the menu screen will show as:
DVI → VIDEO1 → VIDEO2 → VIDEO3 → OFF → VIDEO3 → VIDEO2 → VIDEO1 → DVI VIDEO1→ …

If you release the "INPUT" KEY for 5 seconds without any action, the menu selection screen will be closed. And it will remain at the item which you'd selected.

When you press "MENU", "BRIGHTNESS", "PIP" Key, you will enter the menu item selection.

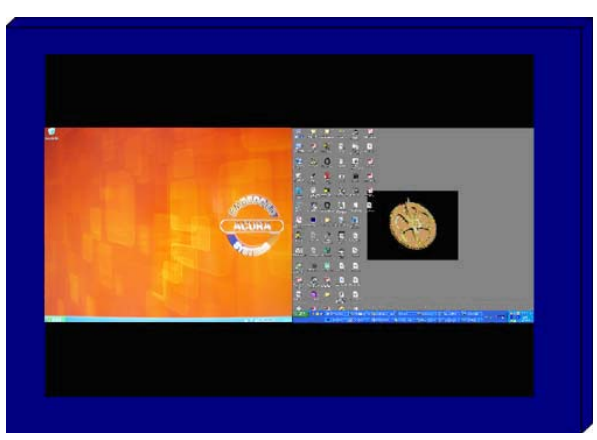
Any modified or changed parameter setting will be automatically saved if you power off or Exit the menu setting screen.

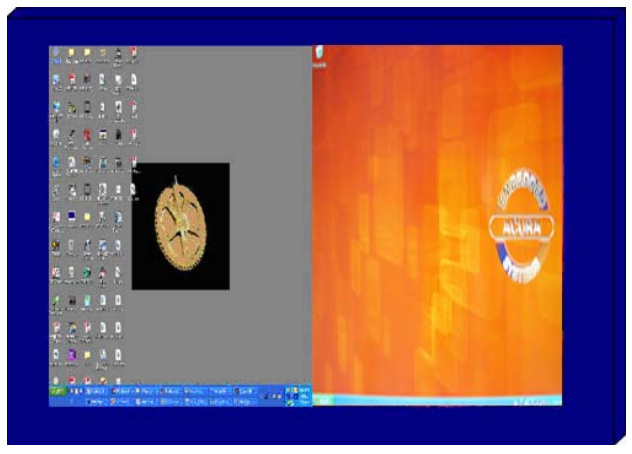
PIP KEY Function
You can choose **PIP** size scaling from 1~10 times and **PAP**1 (4:3 aspect ratio) or **PAP2** (side by side for half full screen)

PI P (1~10) Picture
You can press "**RIGHT/LEFT**" key to move PIP window position
RIGHT KEY: the PIP window will move horizontally. You may put the **PIP** window to any desired horizontal position you want.

LEFT KEY: the **PIP** window will move vertically. You may put the **PIP** window to any desired vertical position you want.

PAP1 (4:3 aspect ratio window) Picture





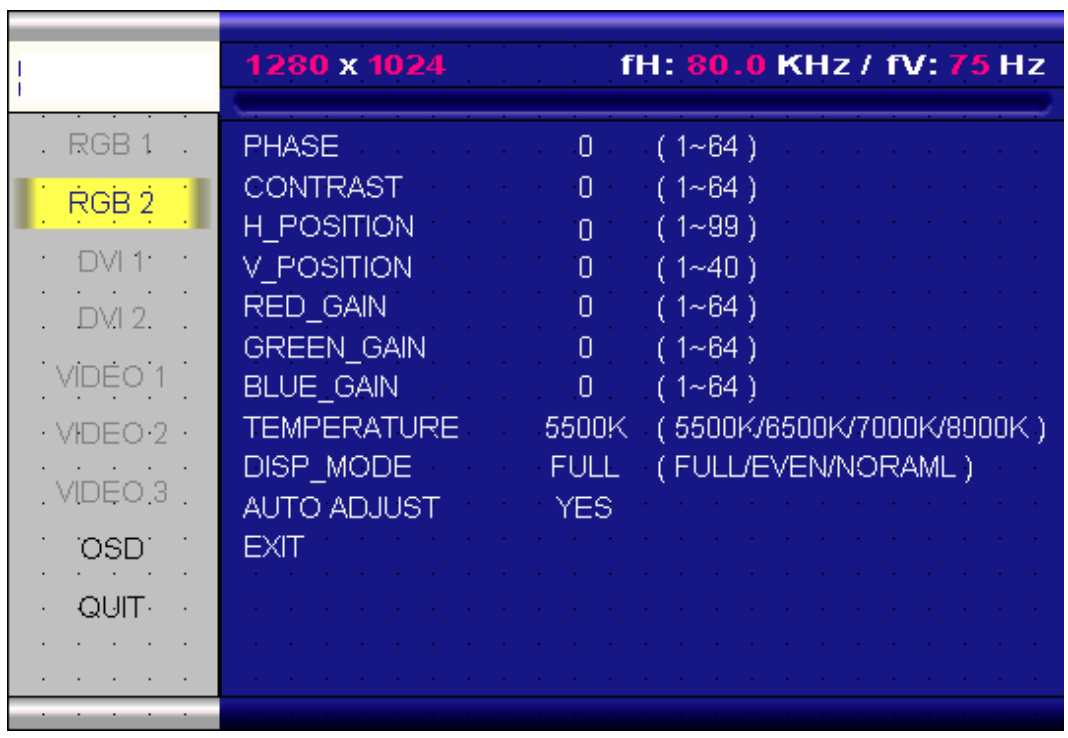
PAP2 (Side by side full screen window) Picture

MENU KEY

When you press “**MENU” KEY**, the Acubrite 21-Nav OSD main menu screen will appear as below:

If you release the “**MENU”** KEY for 30 seconds without any action, the menu **OSD** screen will disappear automatically. You can also choose “**QUIT**” and then press “**MENU**” KEY to exit this **OSD** menu screen.

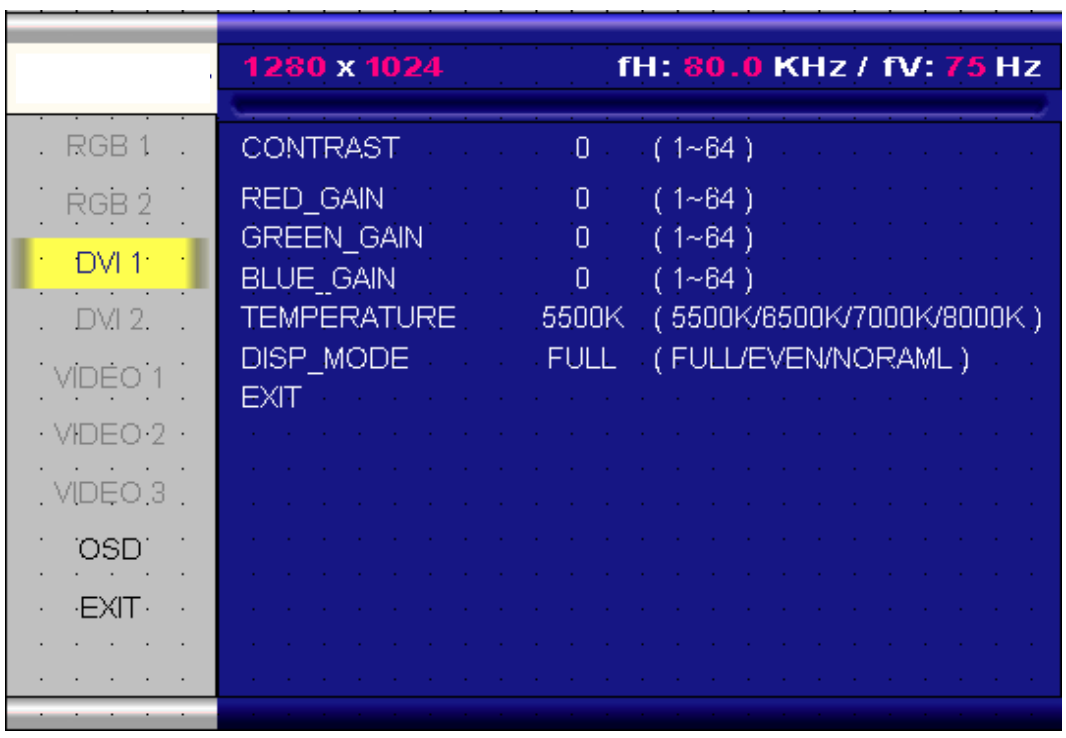
RGB1 & 2’s setting screen:



RGB Setting Item Description:

- PHASE Horizontal Sampling Phase Adjustment
- CONTRAST Contrast Adjustment
- H_POSITION Horizontal Screen Adjustment
- V_POSITION Vertical Screen Adjustment
- R_LEVEL Red Color level Adjustment
- G_LEVEL Green Color level Adjustment
- B_LEVEL Blue Color level Adjustment
- TEMPERATURE Color Temperature Adjustment
- DISP MODE
  - FULL Full Screen
  - EVEN Half Screen
  - NORMAL Keep normal aspect ratio
- ·AUTO ADJUST Auto adjustment
- ·EXIT Quit from current setting

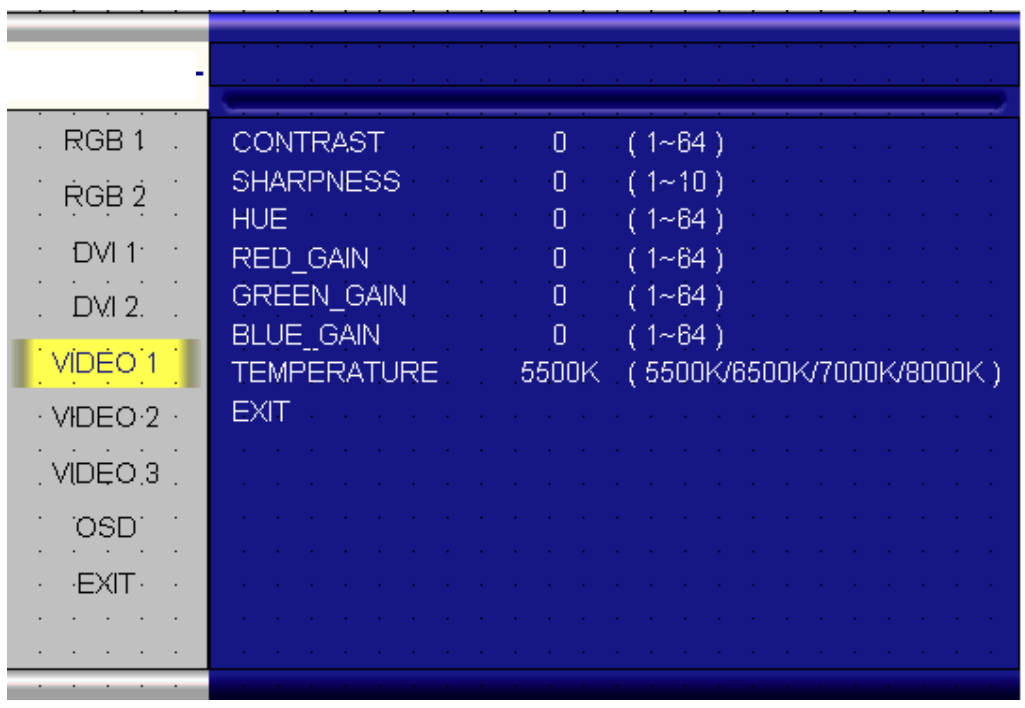
DVI 1 & 2's setting screen:



DVI Setting Item Description:

- CONTRAST Contrast Adjustment
- R_LEVEL Red Color level Adjustment
- G_LEVEL Green Color level Adjustment
- B_LEVEL Blue Color level Adjustment
- TEMPERATURE Color Temperature Adjustment
- DISP MODE
  - FULL Full Screen
  - EVEN Half Screen
  - NORMAL Keep normal aspect ratio
- EXIT Quit from current setting

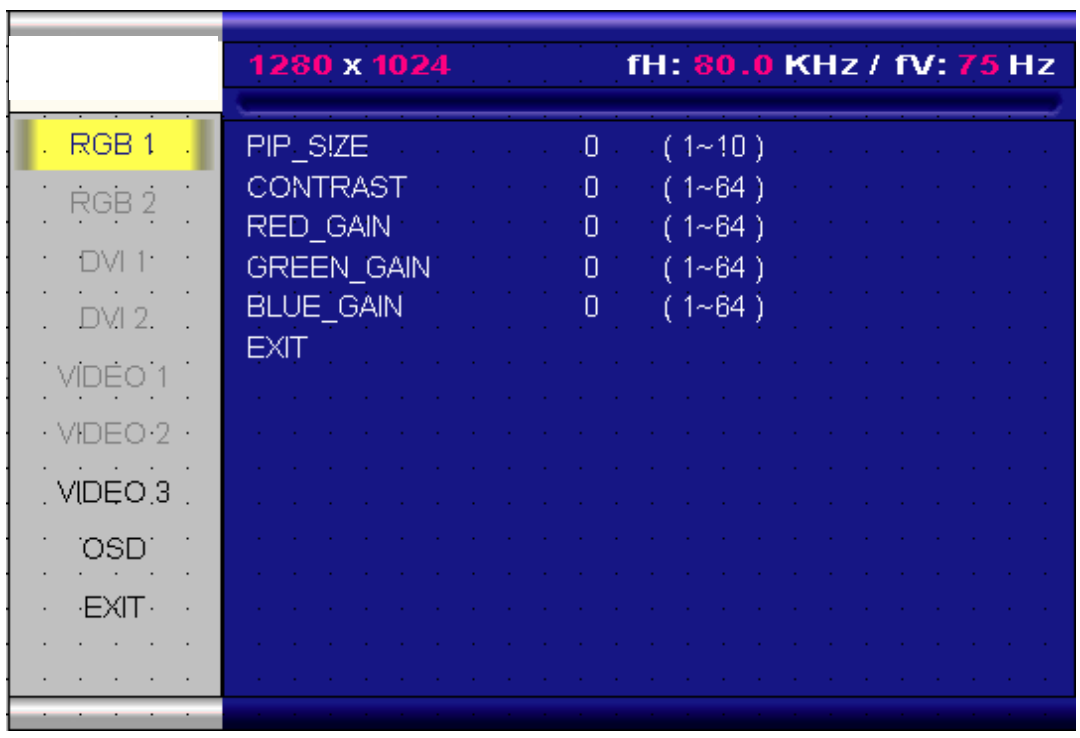
VIDEO 1 & 2 & 3' setting screen:



VIDEO Setting Item Description:

- CONTRAST Contrast Adjustment
- SHARPNESS Horizontal edge sharpness
- HUE Color Adjustment
- R_LEVEL Red Color level Adjustment
- G_LEVEL Green Color level Adjustment
- B_LEVEL Blue Color level Adjustment
- TEMPERATURE Color Temperature Adjustment
- EXIT Quit from current setting

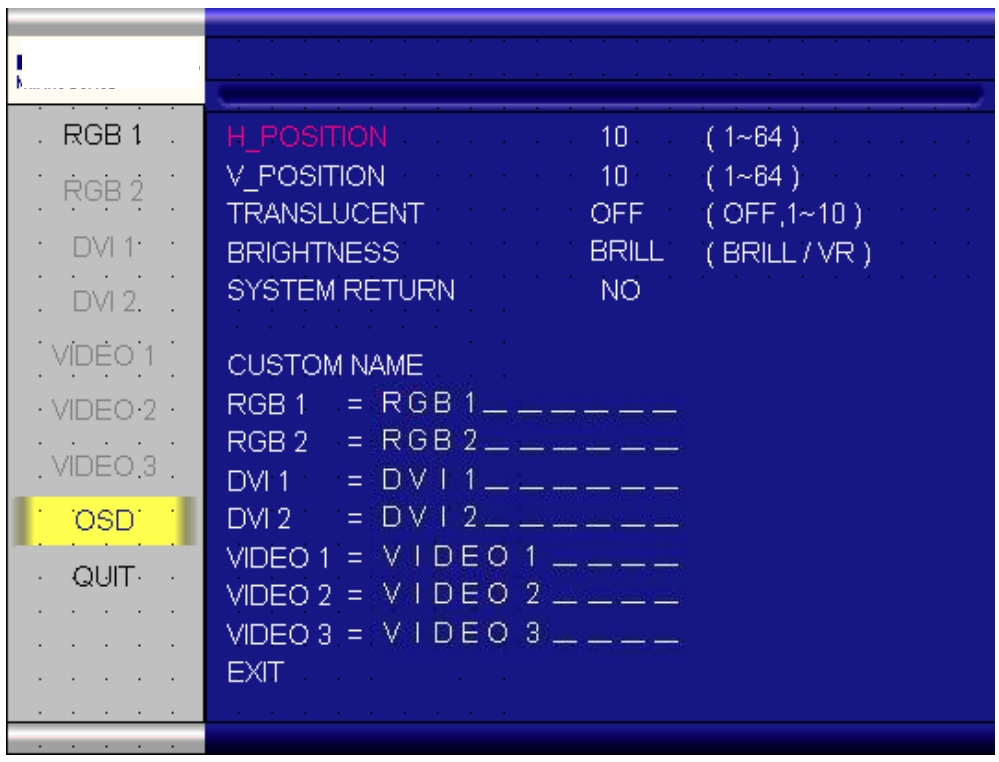
PIP Sub-menu setting screen:



PIP Setting Item Description:

- PIP_SIZE Picture in Picture Screen Size Adjustment
- CONTRAST Contrast Adjustment
- R_LEVEL Red Color level Adjustment
- G_LEVEL Green Color level Adjustment
- B_LEVEL Blue Color level Adjustment
- EXIT Quit from current setting

OSD Setting Main Screen:

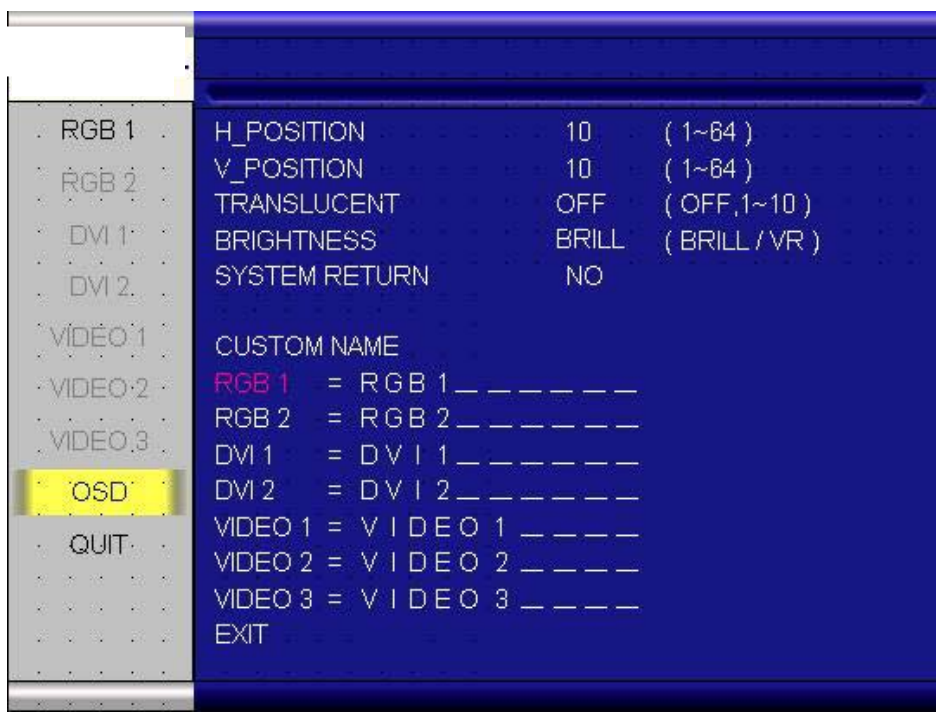


OSD Setting Item Description:

- H_POSITION Horizontal Screen Adjustment
- V_POSITION Vertical Screen Adjustment
- TRANSLUCENT Screen background color can be adjusted as transparent as you want (total 10 scales)
- BRIGHTNESS Selection between “BRIGHTNESS” key or “VR” Button for brightness adjustment
- SYSTEM RETURN Restore all parameter setting to factory default value
- EXIT Quit from current setting

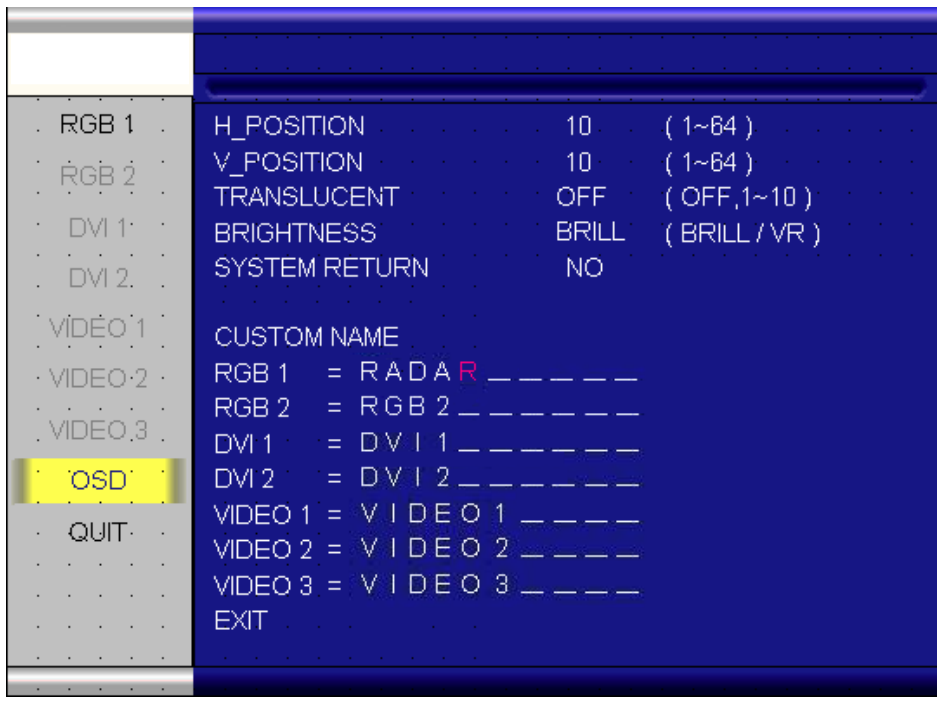
Programmable OSD Source Tag setting screen:

1. Press the “RIGHT/LEFT” key to selected channel

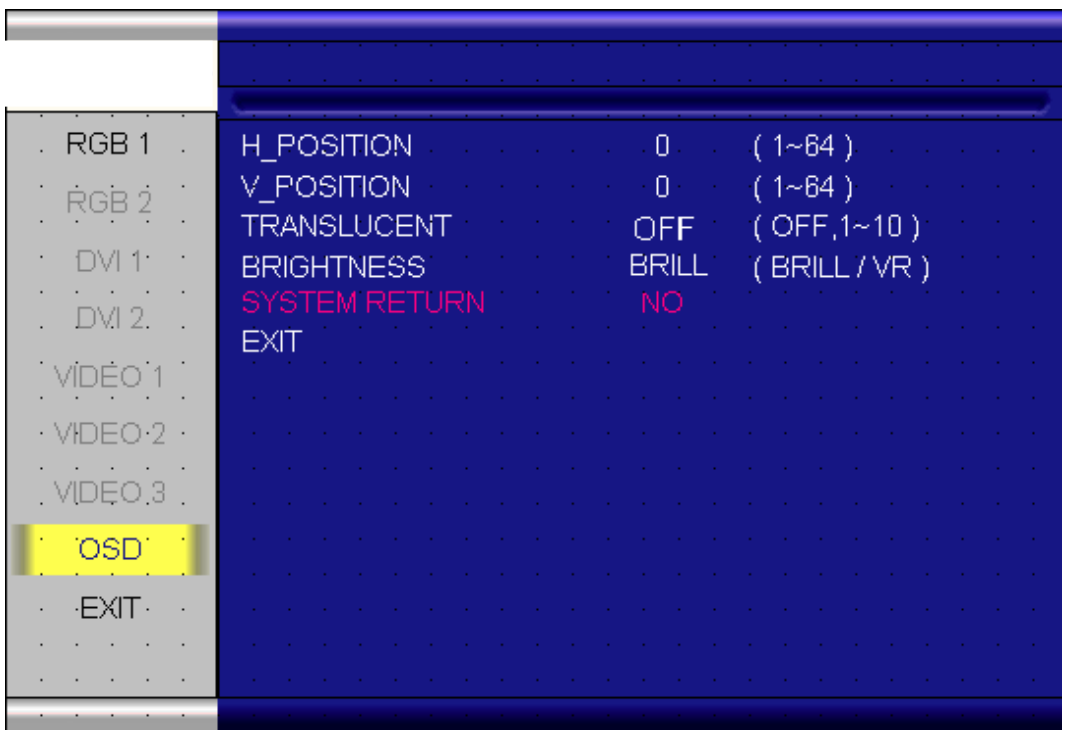


2. Press the “MENU” key to rename the “RGB1” to any desired source input (ex. Sonar, Radar…etc). You may press “RIGHT/LEFT” key to select from (A~Z, 0~9, “.”, “-“) character. If done, just press “MENU” key to jump to next character for renaming step by step.

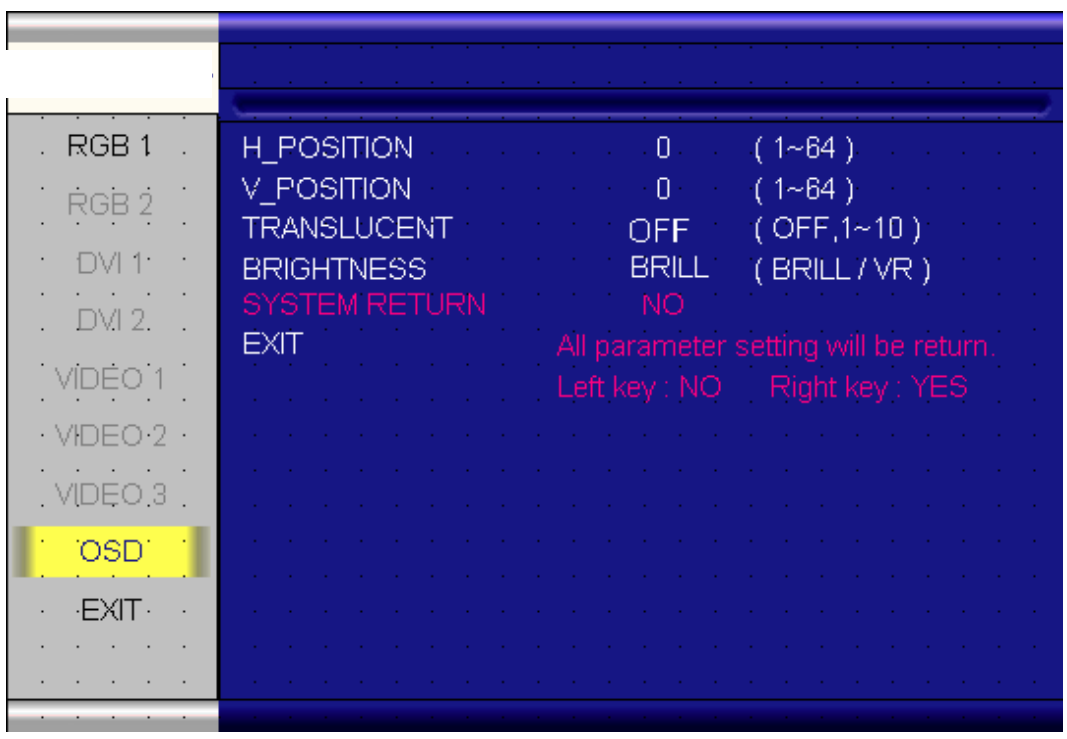
3. This is the picture of renaming RGB1 channel to “RADAR”



SYSTEM RETURN setting screen:



You may choose “SYSTEM RETURN” selection item on the OSD Screen to restore all of the parameter setting to factory default value. When you press “UP” or “RIGHT” KEY, the parameter will show “YES” and confirm it.



“KEY LOCK” Mode Function setting screen:

When you press “MENU” and “BRIGHTNESS” KEY simultaneously for 3 seconds, you will enter the “KEY LOCK” mode. At the same time, the screen will show “KEY LOCK” image as below for 5 seconds and then disappear.

In the “KEY LO CK” mode, it will be no function to press any key. When you press the key in the “KEY LOCK” mode, the screen will show “KEY LOCK” image as below for 5 seconds and then disappear.

To Release/Unlock “KEY LOCK” Mode Function setting screen:

In the “KEY LOCK” mode, when you press “MENU” and “BRIGHTNESS” KEY simultaneously for 3 seconds, you will release/unlock the “KEY LOCK” mode. At the same time, your screen will show “KEY UNLOCK” image as below.

6.0 TECHNICAL SPECIFICATION

6.1 Specification- ACUBRITE 21-Nav

LCD Display

Backlight	21.5" LED Backlight
Active Display Area	476.64 x 268.11 mm
Brightness	1000 cd/m2 *
Resolution	1920x1080 (FHD)
Contrast Ratio	1000:1
Pixel Pitch (mm)	0.248(H) x 0.248 (V)
Viewing Angle	170 (H), 160(V)
Display Color	16.2M
Response Time	5ms
Inputs	VGAx2, DVIx2, Composite x3, RS232x1
Picture in Picture	3 stages

Mechanical

IP Rating	Facial waterproof to IP65 standards when console mounted.
Construction	Rugged Aluminum Alloy Chassis
Mounting	Panel (Flush) mount, VESA mount
Dimension	525.8(w)x345.2(H)x56.4(D)

Power

Voltage	Operates on 12V and 24V systems
Power Consumption	55W at 12V

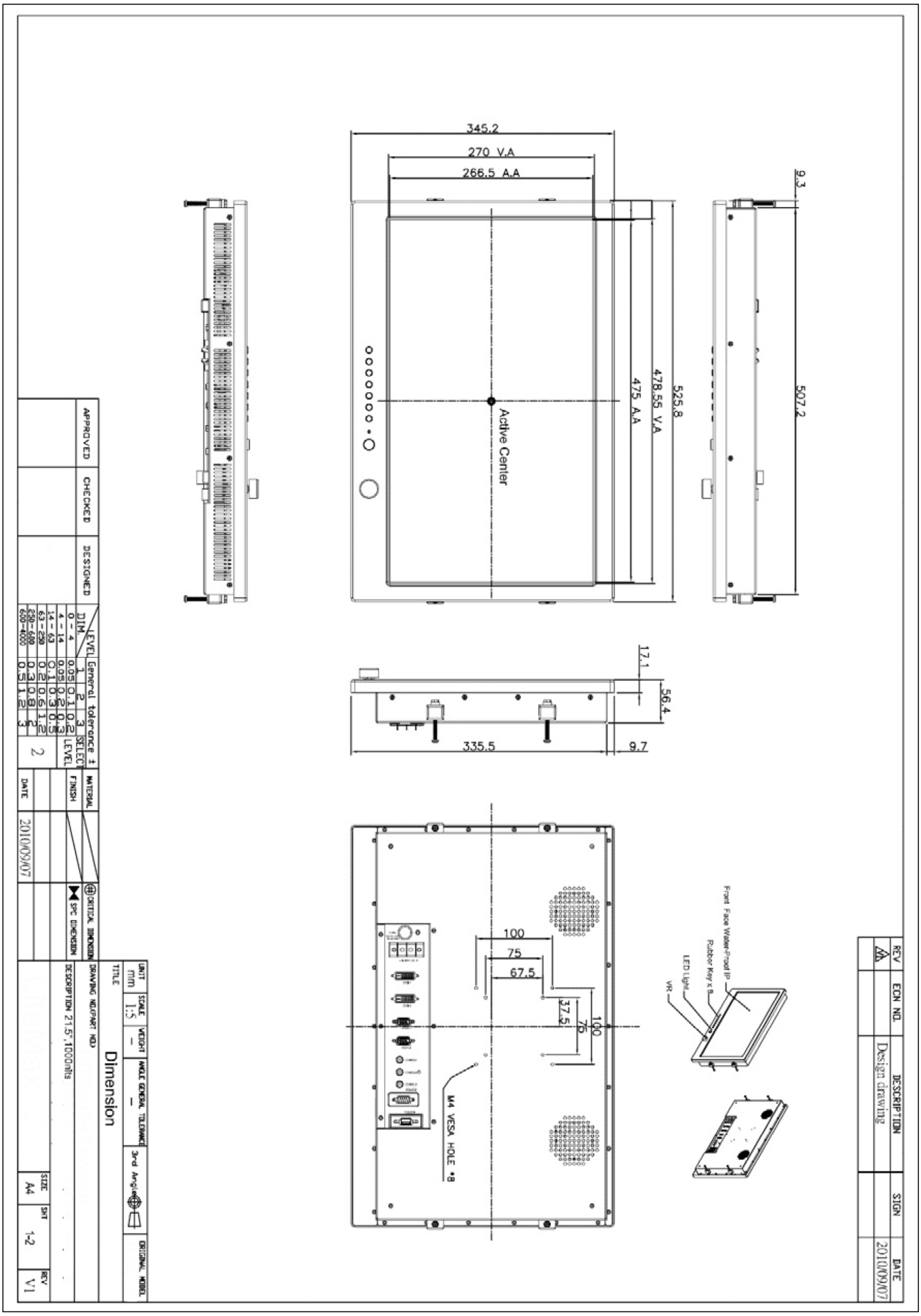
Environmental

Operating Temperature	-10°C~50°C
Non-Operating Temperature	-20°C~70°C

Certification Designed to meet FCC Class A,

* The brightness is measured under the 25°C ambient temperature before touch attached. Due to Panel material's deviation, different panel supplier will set different specific variance range to optical characteristics. The factors of time used, Lamp current, ambient temperature will influence the optical measurements.

6.2 ME Drawing- ACUBRITE 21-Nav



7.0 MAINTENAINCE AND TROUBLESHOOTING

Precautions

To maximize the life and safe use of your unit, always be sure to follow the warnings, precautions and maintenance recommendations in this user's guide.

In a Watercraft or Vehicle:

- The monitor should be visible to the driver only if it is used for navigation, or system control. Care should be taken to ensure distraction does not occur.
- Review all applicable federal, state and local laws and regulations to make sure the monitor is used properly and safely.
- Avoid using the monitor for extended times while the charging system is not running, or the monitor could drain the watercraft's battery.

Maintenance

High Voltage

The display unit contains high voltages.

01. To reduce the risk of electric shock, do not remove the cover or back.

W AR N IN G!

There are no user-serviceable parts inside.

02. Make sure you turn off and unplug the display before installing devices.

Cleaning the display

Cleaning

DO NOT use acid, ammonia based or abrasive products.

C A UTI ON!

1. Use a soft cloth moistened with mild detergent, isopropyl alcohol, or window cleaners to clean the display housing.

2. Ensure the display is disconnected from the power supply. Wipe the display with a clean, damp cloth.

3. If necessary use iso-propyl alcohol (IPA) or a mild detergent to remove grease marks.

4. Never use abrasive cleaners, waxes or solvents to clean the unit.

Disconnecting the power supply

To disconnect the display from the boat's power supply either;

• Isolate the power cable from the main supply, or,

• Remove the power connector from the rear of the monitor.

The power button on the front of the monitor changes the operating mode; it does not provide complete protection in an emergency

Troubleshooting

All products are, prior to packing and shipping, subjected to comprehensive test and quality assurance programs. However, if this unit should develop a fault, please refer to the following table to identify the most likely cause and the corrective action required to restore normal operation. If you still have a problem after referring to the table below, contact your local dealer, national distributor or Acura Embedded System Inc Technical Services Department for further advice.

Common problems and their solutions

Problem	Solution
The display is very dim or dark	Adjust the display as described in “Image adjustment on ” Section 5 OSD Menu.
The display shows the message ‘No Input’	Check that the video source i.e. display, camera, DVD etc. is powered and that the cables are correctly connected.
You have pressed the power button, but the display does not function.	1. Make sure that the power cable is well connected and that all connections are tight and free from corrosion. 2. Check the system fuse.

With the unique set of products, Acura Embedded Systems remains committed to its goal of providing trouble-free and customer-friendly service. A special customer service unit has been set up specifically to cater to our esteemed customers' needs.

Technical Support:

For **technical support contact your Salesperson**

support@acuraembedded.com

Mailing address:

Acura Embedded Systems Inc.

Unit #1, 7711-128th Street, Surrey, BC V3W 4E6, CANADA
Ph: (604) 502-9666 Fax: (604) 502-9668

Toll Free 1-866-502-9666